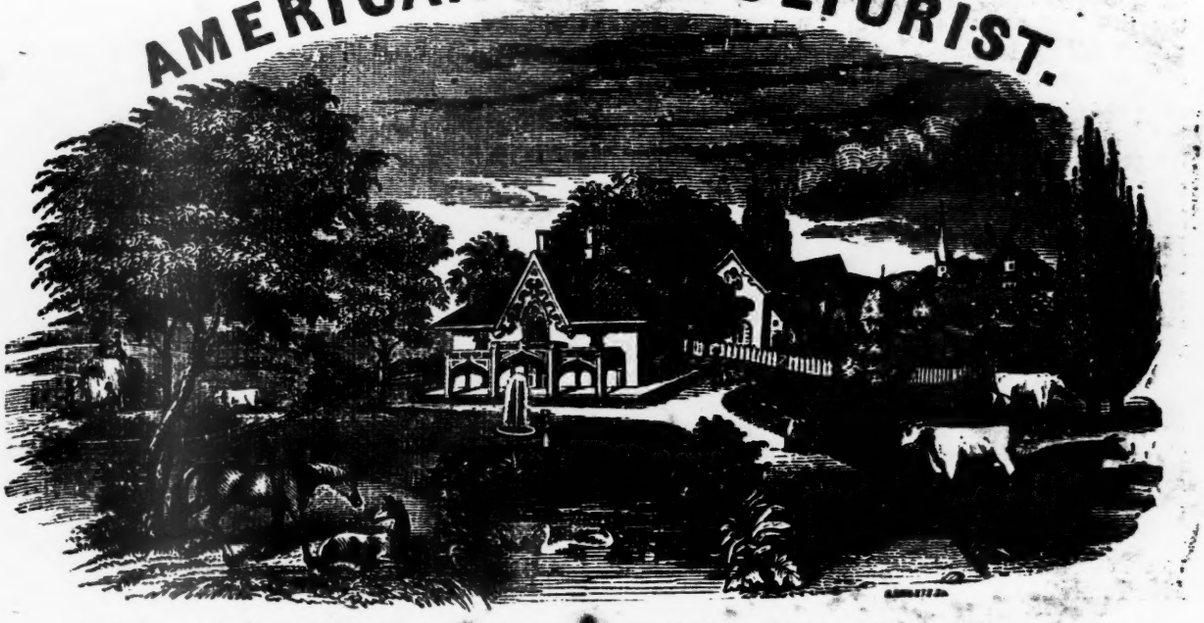
AMERICAN AGRICULTURIST.



Agriculture is the most healthy, the most useful, and the most noble employment of man.—WASHINGTON.

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TOPPING CORN.

IT has long been a mooted question, whether topping Indian corn (that is, cutting off the stalks between the ears and the first joints above the ears), a few days before the kernels are fairly glazed, has a tendency to increase or diminish the yield. Mr. J. Ely, whose opinion on topics connected with practical agriculture is deserving of the highest respect, arrived at the conclusion, from several experiments made by him, on a limited scale, and detailed in Buel's "Farmer's Instructor," that "*about twenty per cent., or one fifth part of the crop, is destroyed by cutting the stalks in the way they are usually cut.*" Experiments have since been made by others, though limited in extent, which have been attended with opposite and variable results, yielding in some instances more, where the stalks had been cut, in others less, while in a few, the yield was essentially the same.

As this is a subject of vast moment to the farmers of a large portion of the United States, it is highly important that the question should be decided by several well-tried experiments on an extended scale. Let a whole field, of one or more acres be taken, of uniform management and growth. Cut the stalks from half the hills, beginning at one end of the first row, cutting the first hill, then leave the next uncut, and thus proceed, alternately, cutting one, and leaving one, throughout the field. As soon as the half from which the stalks have been cut is sufficiently ripe, let the ears be harvested husked, weighed, carefully noted, and stored away to dry. Then, in a like manner, as soon as the other half of the field of uncut stalks has arrived at an equal degree of ripeness, let the ears be harvested, husked, weighed, and dried, in a separate parcel, in all respects the same as those from which the stalks were cut. Then, early in winter, let the two parcels be carefully shelled, measured, and re-weighed, both before and after shelling, and the results will be a fair test of the comparative merits of the two methods.

In the same field of corn, also measure off one or more acres, cut the stalks alternately, as directed above, from one half of the hills, and leave the other half until the grain has become glazed, or hard, on the outside. Next cut up, close to the surface of the ground, the half from which the stalks have not been cut, and put it immediately into "stooks," or "shocks;" and, as soon as it is sufficiently dried, separate the ears from the husks, weigh them, and store them in the crib. As soon as the other half, from which the stalks have been cut, is well matured, let it be harvested, husked, weighed, and stored in the crib for drying. Then, early in winter, let the two parcels be shelled, measured, re-weighed, and compared as above.

IMPROVEMENT OF EAST-JERSEY LANDS BY GREEN-SAND MARL.

IT may not be known to all our readers that there exists along the Atlantic coast a mineral fertilizer commonly called "green marl," which has been of immense service in restoring to productiveness meagre, or worn-out lands. The stratum, in which this substance abounds, as the principal ingredient, commences, as far as known, in New Jersey, at the base of the Highlands of Nevesink, near Sandy Hook, and along the sea shore from a little north of Long Branch to Shark Inlet, thence ranging south-westward, in a wide belt, through Shrewsbury, Marlborough, Squankum, and other towns in Monmouth county, gradually contracting as it runs parallel with the Delaware River, at a distance of a few miles, to Salem. It is then prolonged across the state of Delaware, in a narrow strip, into the easterly part of Maryland, where it disappears under the overlapping formations. It

again shows itself on the Potomac and throughout the tide-water region of Virginia, where the proportion of the so-called "green marl," of New Jersey, is materially diminished.

In New Jersey, between Long Branch and Deal, the bed of marl has been penetrated to the depth of 30 feet. The upper two feet consist of a green clay, seemingly derived from the disintegration of a green granular mineral, intermixed with a large proportion of yellowish-white clay. The main bed, which has a thickness of about 26 feet, comprises several subordinate layers; but all contain a large share of the green grains. Beneath the whole, there is a greyish-yellow clay, in which the grains abound, of remarkably large size, and are associated with numerous casts of shells. In one or two other instances, wells have also been sunk through the bed of marl, and the depth of the green sand ascertained to be about 30 feet. Various fossil shells and other marine productions, amounting, according to Professor Rogers' Geological Report, to considerably more than one hundred species, are found imbedded in this marl.

On a short visit, recently made by us, to the farm of Dr. John S. Bartlett, late editor and proprietor of the "Albion," and to several other farms near the head of Pleasant Valley, in Marlborough, N. J., which had been improved by the addition of marl, we were forcibly impressed in witnessing the luxuriant fields of hay, grain, Indian corn, and other crops, where the original soil was a kind least of all congenial to vegetation, and where, in many cases, there was scarcely sod sufficient to keep the wind from blowing the surface away. Dr. Bartlett pointed out to us a beautiful field of clover, which was strikingly contrasted with the barrenness around it, that had been produced, simply by adding to each acre about 300 bushels of marl. This and other striking proofs of the fertilizing power of this substance ought to encourage the farmers of the whole marl region, referred to above, to search, by boring, or sinking pits, for this manure, on their own lands; for, there can be but little doubt that the agriculture of all light sandy soils, situated within reasonable distances of this marl, is destined, in future, to derive incalculable benefits from its application whenever judiciously and properly put on. As an instance of the advantages to be gained by researches of this kind, we would state, that Dr. Bartlett contracted, last year, for 600 loads of marl, at three miles' distance from his farm, which cost him, in the aggregate, when delivered on his land, about seventy cents per load. A few weeks ago, in examining the banks and bottom of a small stream, running through his place, he discovered an abundance of marl within five feet of the surface, which, on analysis, proved to be similar in character to that which he had been at so much expense in purchasing and carting to within a rod of the very spot where it was found; thus, enhancing the value of his farm, perhaps, fifty per cent.

The value of this marl, as an active fertilizer, when spread on the surface of light sandy lands, in East Jersey, has been amply tested, it is said, for fifty years. Various were the views maintained in regard to its fertilizing principles, and much speculation was offered, in reference to them, as is usual on similar subjects. It is stated, however, that the problem was first solved by Mr. Henry Seybert, of Philadelphia, who demonstrated that the green sand of New Jersey contained a considerable amount of potash, which seems to afford a satisfactory clue to its mysterious effects.

In comparing the details of the several analyses, given by Professor Rogers, in his Geological Report of New Jersey, it will be seen that the green-sand marl, even when of the greatest purity, is not absolutely constant, either in the nature of the ingredients which enter into its composition, or in their relative proportions. The per centage of the silica varies from 43 to 52.32; that of the alumina, from 6.4 to 8.94; that of the protoxide of iron, from 21.6 to 27.56; that of the potash, from 5.5. to 14.48; and that of the water, from 4.4 to 8.12 It will be found, moreover, that in some instances, besides the above-named elements, that lime enters into the constitution of the green sand, in other cases magnesia; while, occasionally, both occur. The amount of these earths, however, is generally in small proportions.

As our visit to the New-Jersey marl region was somewhat limited, we intend to extend our inquiries and furnish our readers with some further account.

ADULTERATION OF FOOD.—No. 2.

Wheat Flour.—The principal substances employed in the adulteration of flour are potato starch, bean, pea and Indian-corn meal, rye flour, chalk, bone earth (burnt bones), powdered flints, plaster of Paris, and damaged, or inferior kinds of wheaten flour.

One of the simplest methods of detecting flour adulterated with potato starch, is by its weight, or specific gravity—thus a vessel, which will hold one pound of good wheat flour, will contain about a pound and a half of potato starch; hence the amount of adulteration can be estimated to a certain extent.

If a small quantity of boiling-hot water be poured upon flour, in which pea meal is present, the odor of peas will be detected; if bean flour, that of beans. Bean meal, also imparts a rose-colored tinge to bread adulterated with it.

Rye flour, added to wheaten flour, gives it such a decided taste that the fraud is readily detected. The same may be said of Indian meal.

Arrow Root and Tapioca.—The analogy arrow root has to potato starch, has induced mercenary persons to adulterate the former substance with it; and not only has this been done, but we have heard of several well-authenticated instances in which potato starch alone has been sold for the genuine article imported from Bermuda, or the West Indies. There may not be any direct harm in this; that is to say, potato starch has the same nutritive powers as arrow root; but it is decidedly a fraud upon the public to sell so cheap an article at the same price as one which is comparatively costly. Besides, in potato starch, there is a peculiar taste, that brings to mind that of raw potatoes, from which the genuine arrow root is entirely free.

The fraud, however, can readily be detected, as arrow root is not quite so white as potato starch, its grains are smaller, and have a pearly and very

brilliant lustre; furthermore, it always contains peculiar clotted masses, more or less large, which have been formed by the adhesion of a multitude of grains during the process of drying. When genuine, it is odorless and tasteless, and produces a sort of crackling noise, when pressed, or rubbed, between the fingers. The suspected sample, if adulterated with potato starch, when mixed with hot water, will immediately develope the raw-potato odor, but if it be pure and unmixed, it will be without smell.

Tapioca is also sometimes manufactured from potato starch, by drying potato flour on metallic plates, heated to about 212°F. The paste immediately forms hard unequal lumps, when stirred; after it is pretty well dried, it is sifted; the finer portions form factitious sago, whilst the larger ones constitute tapioca. When these spurious articles are heated with water, the peculiarly disagreeable odor of raw potatoes is given off.

Bread.—The adulteration of bread is often carried to a fearful extent. Not only is the flour from which it is made falsified by old and damaged grain, and other substances just named in the adulteration of flour, but frequently alum, carbonate of ammonia, carbonate of magnesia, and common bar soap are added to disguise, or improve some bad quality in the flour, or to increase the weight. Bread is also sometimes adulterated with blue vitriol (sulphate of copper), white copperas (sulphate of zinc), both of which are highly poisonous, carbonate of potash, plaster of Paris, and pipe clay.

The practice of introducing boiled potatoes into bread is very common with some bakers. In this, there is nothing unwholesome; in fact, the bread is more palatable; but it is a decided fraud; for the bread made in this manner, is not so nourishing as wheaten bread, and is made far cheaper than if flour alone were used. Hence it should not sell for the same price. Much of the bread made with potatoes is not so nourishing, by at least 20 per cent. as that of wheaten flour.

Alum is employed for the purpose of working up inferior kinds of flour. If omitted, the bread has a slight yellowish-grey hue, as may often be seen in what is called "home-made bread," in private families. Such bread remains longer moist than that made with alum, yet it is not so light and full of "eyes," nor so porous, and it has also a different taste.

The quantity of alum necessary to produce the required whiteness and porosity in bread, depends entirely on the genuineness of the flour and the quality of the grain from which it is obtained. The smallest quantity of alum that can be employed in producing a seemingly good bread, from a bad flour, is stated to be about six grains to each pound of flour; but the quantity generally used is believed to be much more.

Markham, in his "Considerations on the Ingredients Used in the Adulteration of Flour and Bread," states that, in making five bushels of flour into bread, there are added 8 oz. of alum; 4 lbs. of salt; and ½ a gallon of yeast, mixed with about 3 gallons of water.

Although alum, in bread, is not so injurious as some of the materials to be hereafter treated of, yet its daily use is apt to disorder the proper functions of the stomach, and produce costiveness and other inconveniences, more especially with persons having weak constitutions. Its use, therefore, is much to be condemned, more especially as it is employed to disguise the bad quality of the flour.

Carbonate of ammonia (volatile sal ammoniac, or smelling salts), is employed by fraudulent bakers, in order to produce light and porous bread from unwholesome and bad flour, termed "sour." Thus, a material, which in itself, is perfectly harmless, is made use of by the baker, as a mask for fraud. This salt, which chiefly becomes converted into a gaseous state, during the operation of baking, causes the dough to swell up into air bubbles, rendering the bread light and porous, as though it were made of superior flour.

Carbonate of magnesia of the shops, when mixed with inferior kinds of flour, will apparently produce bread of a good quality. The loaves made with it, rise well in the oven, and after being baked, they are light, spungy, and keep well. In cases where new flour is of an indifferent quality, from 20 to 30 grains of this carbonate to a pound, when added, will considerably improve the taste and appearance of the bread. When the flour is of the worst quality, 40 grains of magnesia to a pound seems necessary to produce the same effect.

It has been stated, that not the slightest danger can be apprehended from the use of so innocent a substance as the carbonate of magnesia in the manufacture of bread. This, however, is a mistake; for it is a well-ascertained fact, that the daily use of the common magnesia of the shops, induces the formation of the most dangerous and painful calculi. So that, this species of admixture is to be most energetically condemned, not only on account of the specific action of the substance employed, but also because, by its means, an inferior flour can be used.

But the most deadly fraud practiced in the manufacture of bread, consists in the introduction of sulphate of copper (blue copperas), when the flour used is obtained from bad grain. If the bread does not rise well, a little blue copperas obviates the inconvenience; it also causes the bread to retain much more water. The quantity generally employed is very small, say, about one ounce of the copperas dissolved in a quart of water, a wine glass of which is sufficient for 175 lbs. of flour. Kuhlmann, in Ures' Dictionary, deduces from a series of experiments in baking, with various small quantities of blue copperas, that this salt exercises an extremely energetic action upon the fermentation and rising of dough, even when not above $\frac{1}{70000}$th part of the weight of the bread employed, or one grain of the copperas for 10 lbs. of bread. The proportion of this salt, which makes the dough rise best, is stated to be $\frac{1}{200000}$th of a grain to 3 lbs. of bread. If more of the copperas be added, the bread becomes moist, less white, and acquires a peculiarly disagreeable smell, like that of leaven.

The sulphate of zinc (white copperas), is also sometimes employed in the manufacture of bread for the same purpose as the sulphate of copper, the effects of which, we have just described, but it does not act in so energetic a manner. It is equally poisonous, however, and is as much to be dreaded.

Carbonate and bi-carbonate of potash (pearlash

and salæratus), are doubtless employed, in bread-making, not only to destroy the sourness in the flour, or dough, but, in some cases, for the purpose of bringing the bread into such a condition that it will retain moisture for a considerable time; which is, to the baker, a great advantage. The use of these salts has no injurious effects on the bread; yet, if added with fraudalent intent, it cannot be regarded otherwise than wrong.

Common bar soap is sometimes added, to produce lightness and porosity in bread, as well as to make it short and brittle. This is a filthy fraud, the perpetrators of which should be severely punished.

VISIT TO MR. CUMINGS' GARDEN, WILLIAMSBURGH.

We lately very pleasantly passed an hour or two in the garden of Mr. A. P. Cumings, at Williamsburgh, Long Island, near this city, some account of which may not prove uninteresting to many of our readers. Mr. C.'s grounds, exclusive of those occupied by his mansion, conservatories, out-buildings, &c., embrace nearly three fourths of an acre, having been reclaimed almost from a state of nature within the last five years. At the present time, this garden is a complete mass of verdure, flowers, and fruits, many of which are very choice, or rare, and are natives of the most distant parts of the globe.

Besides an abundance of culinary vegetables, in common use, and the smaller garden fruits, we noticed some forty varieties of the pear, most of which had been grafted on quince stocks, and are in perfect bearing; several varieties of the cherry, including the black Tartarian, one of which produced, last year, thirty pounds of fruit; quite a number of grape vines, in full bearing, comprising the Isabella, Catawba, and Elsanborough, among the natives, and eight or ten foreign ones under glass; several varieties of the quince, among which are the Japan, Portugal, and Van Mons; and a goodly display of the apple, peach, apricot, nectarine, plum, fig, orange, lemon, &c.

Among the ornamental trees and shrubs may be found ten or twelve varieties of the magnolia, the European holly, the copper-leaved beech, the Irish yew, the weeping ash, Paulownia imperialis, azalias, acacias, camellias, three species of araucaria, the India-rubber tree, spruce and fir trees, and numerous others.

Among the choice flowers and conservatory plants, may be seen about eighty varieties of cacti, four species of melastoma, four species of aristolochia, among which is the famous variety from Brazil, besides a fine assortment of dahlias, hydrangeas, calceolarias, pelargoniums, pæonias, geraniums, &c., &c. In short, the collection of exotics embraces a more choice and extensive variety than any other private establishment of the kind, in or around New York.

There are several features in regard to Mr. Cumings' garden, which are particularly worthy of the consideration of those who have been deterred from forming similar collections, thinking that it would be attended with an unwarrantable expense, and would require so long a period to bring the fruit trees into bearing, that they would not live to enjoy them Although Mr. Cumings' establishment has been in existence only about five years, he already raises more than fruit enough for his family consumption, with a prospect of an annual increase for years to come. Notwithstanding his greenhouse collection, and ornamental plants are, perhaps, inferior to none about the city, they have been obtained at a comparatively low cost. The specimens, when first purchased, were quite small; but, being vigorous and healthy, and having had good attention paid to them, they have grown rapidly, and have furnished the means of propagating many others of the same kind. Thus it is, that Mr. Cumings, in the course of a very few years, has been enabled to present so large and so fine a collection at so small a cost.

As an appendage to Mr. Cumings' garden, we found quite an aviary of fancy barn-door fowls, ducks, and pigeons; also some very large lop-eared French rabbits. But the most extraordinary thing, in the way of animals, was a grade Durham cow, of a rich strawberry roan color, and nearly all the other characteristics of a thorough-bred. She is of medium size; very fine in her limbs; with a thick, deep carcass; keeps as easily and as fat as a pig; and often has given from 25 to 28 quarts of milk, of the best quality, per day. So many good points united in a cow are rarely found; and we think when they are, they make an animal invaluable. It is a pity that every calf from such cows, whether male or female, could not be saved for breeders. In this way, good stock would soon be made much more common than it now is throughout the country.

REMARKABLE COWS

The most remarkable cow of which we have any account, for the production of butter, is the "Cramp cow," so called, owned by a man of the name of Cramp, in Lewes, England; she was of the Sussex breed, and was calved in 1799. For five years, from 1805 to 1810, the butter produced from her milk, was from 450 to 675 pounds per year; the latter quantity was afforded in fifty-one weeks and four days, from April 6th, 1807, to April 4th, 1808. The greatest quantity of butter she afforded in any one week, was 18 pounds; and the greatest quantity of milk given in any one day, was 20 quarts.

The next most remarkable cow in this respect, was the "Oaks cow," of Massachusetts; nothing was known of her blood—she was bought out of a drove when she was young. Caleb Oaks, of Danvers, Mass., owned her while the greatest quantity of butter was made from her. In 1813, she made 180 pounds, in 1814, 300, in 1815, 400, and in 1816, 484¼ pounds. The greatest quantity of butter made in any one week, was 19¼ pounds, and the greatest quantity of milk she gave in any one day, was 18 quarts. Mr. Josiah Quincy, sen., bought her after this trial by Mr. Oaks, but she never afforded so large a yield of butter after she passed into Mr. Q.'s hands, though she gave 16 pounds per week, and her milk was of such extraordinary richness, that five quarts of it frequently afforded a pound of butter.—*Transactions.*

INSTRUMENTS FOR ASCERTAINING THE FINENESS OF WOOL.

At the agricultural school of Von Thäer, I saw two very simple instruments for measuring the fineness of wool; one was to ascertain the number of curves in a wool hair within an inch.

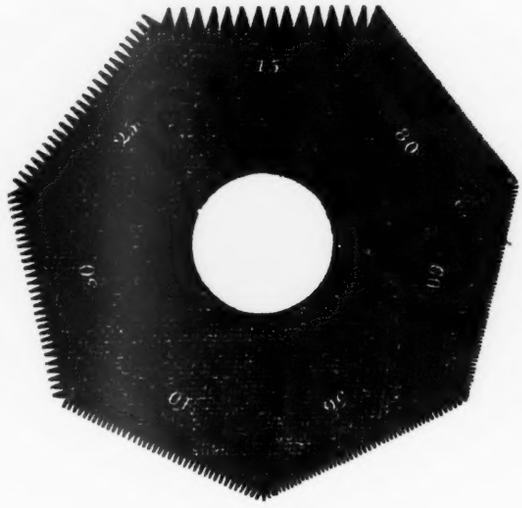


Fig. 59.

This instrument consists of a round flat piece of brass, or other metal, the circumference is divided into five or six inches, and each inch forming fine printed teeth; when the number of curves of a hair is to be determined, the hair is placed over it, in such a manner that the number of curves of the hairs corresponds to the number of teeth on one of the sides of the plate.

Fig. 59, represents such a brass plate.

Fig. 60.

To ascertain the fineness of a given wool hair, there is used a piece of ebony or other highly-polished, black wood, in the shape of a four-sided pyramid. Upon this is placed a fine wool hair from a known celebrated flock, which serves as a standard; the given wool hair is placed near by and secured with beeswax. When prepared in this way, the pyramid is removed from the observer until the fine *wool hair* has vanished from his sight, the distance is then marked, and the pyramid again moved until the other hair has vanished. The distance between the first mark and the place where the last observed one has vanished, is likewise marked, and this interval between both marks serves to compare the fineness of other hairs by. Fig. 60 represents such an instrument.—*C. L. Fleischmann, in Patent-Office Report.*

THE COW—HER DISEASES AND MANAGEMENT.—No. 4.

An affection in the cow, which is regarded of much importance, is inflammation of the stomachs. From the complex structure of these parts of the animal, they cannot fail frequently to be the subjects of disease, as she has no less than four of these for the preparation of her food, each of which may occasionally be disordered; but the first and third stomachs are oftener the seat of attack than the other two.

Inflammation of the First Stomach.—This disorder is often difficult to ascertain; being slow in its progress, and therefore, is the more alarming, as the danger may proceed too far before it is discovered. It generally arises from the food of the animal not undergoing a proper rumination (chewing of the cud), by which the process of digestion is interrupted, and it does not pass off as it should do. By this means, too great a distention of the organ takes place, and the contents being acted upon by heat and fermentation, inflammation unavoidably ensues. This disorder is more common in winter than in summer, when dry food is used, which is so apt to lay long in the stomach.

The first symptoms of the disease are a swelling with heat; the animal walks, or rather moves, with uneasiness and fear. Her breath is hurried, and smells strong; the skin fits tight to the ribs; and she feels much pain on pressing down, or pinching, the fore part of the back with the hand.

In curing this disease, the first object is to clear the stomach of its contents; and this will best be done by administering the following dose, well mixed together, and given to the cow in two quarts of whey, or water gruel, with a pint of ale, or beer, and a half pint of molasses:—

Epsom salts, ½ lb.; saltpetre (nitre), 1½ oz.; cream tartar, ½ oz.; anise seed, ½ oz.; coriander seed, ½ oz.; fenugreek, ½ oz.; laudanum, 3 drachms; linseed oil, 3 gills.

Before this operates, in order to excite the action of the bowels, a laxative clyster may be given, formed of the following ingredients:—

Epsom salts, 2 oz.; common salt, a handful; sweet oil, ½ pint; water gruel, 3 pints.

In this inflammation, bleeding forms a principal means of cure, and should be performed as soon as the disease is discovered, in a quantity proportioned to the urgency of the case; though it should not be less than three pints, or two quarts.

When the more alarming symptoms are thus abated by a repetition of these remedies, as far as may have been proper, then some invigorating plan must be had recourse to, though it must be conducted with judgment and discretion, and medicines of a heating nature not carried too far. Gentle stimulants are therefore most proper, which will promote digestion, and not excite too powerfully the action of the stomach. Such, for instance as the following:—

Epsom salts, 3 oz.; saltpetre, ½ oz.; valerian, ½ oz.; gentian, ½ oz.; ginger and long pepper, 3 drachms each.

To be given in a pint and a half of camomile tea, and three gills of mild beer, or ale, and repeated once a day till the animal recovers.

Much attention must be paid to the food an

drink that is given to the cow when thus diseased. Nothing cold should be allowed to be taken into the stomach, and the diet should consist of warm mashes, or Indian-meal gruel, and the lightest kinds of food, which should sparingly be given, at the same time. Even when the recovery takes place, the same caution should be observed both with respect to the food and drink; for when the appetite returns, the animal will be very apt to overload her stomach, which, being still weak, may be unable to throw it off, if left to her own will in taking it.

Inflammation of the Third Stomach.—This disease is equally frequent as that of the first stomach, and is commonly known by the names of "maw," "fardal bound," and "lakeburn." It is attended with great danger, if proper steps are not taken to remove it before it gains ground. No time, therefore, should be lost to give the animal relief and check its progress. It is most prevalent in dry summers, and in the latter part of the year.

Several causes give origin to this complaint, the most frequent of which is the cow not having a sufficient quantity of water to drink, as happens in time of drought, when cattle are at grass, and the springs and streams are nearly dry. Hence the food is imperfectly prepared for digestion; and besides this, the water drunk is often of a bad quality, from the habit cows have of standing in the water to cool themselves, where they stale and dung, and thus render it unwholesome. Their food, in consequence of wanting proper dilution, becomes so very dry, that on entering the third stomach (which is of a particular structure, divided into folds), it clogs up the folds, and, by stagnation, turns hard and black, forming a kind of cake betwixt each fold, which never fails to produce inflammation. Besides this cause, the disease may also proceed from poor pasturage, either from the produce of the land being naturally so, or the animal being too long on it at a late season of the year, when it cannot afford an adequate supply of digestible nourishment. The same effect may also arise from the animal eating astringent matter, such as sumach, oak leaves, &c.

The symptoms of this malady are a loss of milk, with little or no appetite; a fullness of the body may also be perceived, and a purging takes place, but only in small quantities at a time, of a dark color, and of a disagreeable smell. When made to walk, or turn suddenly round, the animal will groan, and betray much uneasiness; a cough sometimes ensues; the least exercise fatigues and occasions a shaking of the flank; the extremities of the ears and legs feel cold; and as the disease increases there comes on a difficulty of breathing, with a quick pulse, and apparently much restlessness. When fatal, this malady terminates in mortification.

In order to stop the progress of this disease, the first point will be to bleed as early as possible, to the extent of a pint and a half to a quart, according to the violence of the symptoms, and the strength of the animal; and if in very high condition, from two to three quarts will not be too much. Indeed, in certain cases of high inflammation, and much quickness of the pulse, four or five quarts have been taken with advantage in mitigating the disease. In all cases of active inflammation, it is to be observed, that one large bleeding will do more service, and check the disease at once, than a number of small ones. These bleedings are to be repeated once every twelve or fourteen hours, the necessity of which will be judged of by the violent symptoms of inflammation continuing unabated. The repetition of bleeding, however, should never be to the same extent as at first. This practice is to be succeeded by the following mixture, to be given to the animal at one dose, in two quarts of water gruel with a pint of molasses:—

Flour of sulphur, 12 oz.; camphor, 1½ drachms; nitre, 1½ oz.; anise seed and cumin seed, ¾ oz. each.

In two hours after the drink is administered, a pint of linseed oil is to be given in one quart of strong decoction of camomile flowers, in which one ounce of gum Arabic has been dissolved. This will more powerfully assist the operation of the other medicines, and will be a means of dislodging the hard aliment from the folds of the stomach. The operation of the medicine is generally in twelve hours after it is given; sometimes it is as early as seven or eight hours.

Of all medicines, purgatives are best suited to remove this disease, by their operating upon its cause, which is a retention of dry food in the folds of the stomach; and in cases of dissection, the first stomach is always found very full, from the circumstance of there being no digestion nor passage through the other. Clysters, in this disease, have no effect, as the cause is too distant for their operation.

The first marks of the medicine being successful, is its bringing away pieces of black, caked matter; their thickness being generally about that of a half dollar. This appearance indicates certain recovery, if, at the same time, the animal seems inclined to drink. After the operation of the purgatives, the following medicine may be administered:—

Epsom salts, 3 oz.; nitre, valerian, and gentian, each, ¾ oz.; gum myrrh, ginger, and long pepper, each, 3 drachms.

To be given in a pint and a half of camomile tea and a pint of ale for one dose, which may be repeated once a day, or once every other day. In the above prescription the salts are used in a small quantity, to keep the body laxative; and the other materials will give tone to the stomach, and will enable it to throw off the remaining part of the indigestible food which overloads it.

After this, the food and drink of the cow should be the same as recommended for the after-treatment of the inflammation of the first stomach; namely, to avoid giving anything cold, at the same time, making use of diluent drinks.

How to Make Ginger Beer.—Take lump sugar (moist brown sugar will do), 1 lb.; bruised ginger, from which the dust has been sifted, ¾ oz.; cream of tartar, ¼ oz.; and one lemon, sliced. Pour on them one gallon of boiling water; cover up and macerate, until barely lukewarm; then strain and add 2 oz. of yeast. Let the whole work for two to four days, according to the state of the weather; skim the liquid, strain it through a clean flannel, bottle off, and wire down the corks.

AGRICULTURE OF THE CHINESE.—No. 8.

Cultivation of the Mulberry.—On the 18th of May, I passed through an extensive silk district, where the natives were employed in feeding silk worms. The mulberry trees, from which they were fed, were all grafted and produce very fine, thick leaves. I obtained a plant, which is now alive in England, in order to determine the particular variety, and whether it is different from the kinds which are used for the purpose in Europe. It is not yet, however, in a sufficiently advanced state for this to be ascertained. One thing, however, is certain, that the silk produced in this district is considered as being amongst the first in China; but whether this is owing to the particular variety of mulberry tree used in feeding the worms, or to climate or soil, still remains to be determined.

The trees, or rather bushes, are planted in rows, the banks of the canals being a favorite situation; and they are not allowed to grow more than from four to six feet in height. The natives set to work with a pair of strong scissors, and cut all the young shoots off close by the stump; they are then either stripped of their leaves, or taken home in bundles and stripped afterwards. Before this operation takes place, the plants seem in a high state of health, producing vigorous shoots and fine large and thick shining leaves. After the leaves have been taken off, the bushes look like a collection of dead stumps, and in the middle of summer have a curious wintry appearance; but the rain, which falls copiously, and the fertility of the soil, soon revive a succulent plant like the mulberry. The Chinese seem very particular in stirring up the earth amongst the roots of the bushes immediately after the young branches and leaves have been taken off, and the plantations appear to have great attention paid to them.

The farms are small, and are generally worked by the family and relatives of the farmer, who, not only plant, graft, and cultivate the mulberry, but also gather the leaves, feed the silk worms, and wind the silk off the cocoons.

Management of the Silk Worms.—During my progress through the silk district, I visited a great number of cottages, where the worms were feeding. They are commonly kept in dark rooms, fitted up with shelves, placed one above another, from the ground to the roof of the house. The worms are kept and fed in round bamboo sieves, placed upon these shelves, so that any one of the sieves may be taken out and examined at pleasure. The poor natives were greatly surprised when they saw a foreigner coming amongst them, and generally supposed that I intended to rob them of their silk worms. In all the villages which I visited, they uniformly denied that they had any feeding rooms —although the leaves and stems of the mulberry about their doors told a different tale; and they never failed to direct me to go on to some other part of the country, where they assured me I should find them. Before we parted, however, they generally gained confidence, and showed me their collections of worms, as well as their mode of managing them.

Cultivation af Indigo.—In the district of Kiangsoo, my attention was directed to a plant called Tein-ching (*Isatis indigotica*), which is largely cultivated by the inhabitants for the sake of its blue dye. In the southern provinces a great deal of indigo (indigofera), is grown and manufactured, in addition to a large quantity which is annually imported from Manilla and the straits. In the north, however, the plant which we call indigo is never met with, owing, I suppose, to the coldness of the winters; but its place is supplied by the Tein-ching, the leaves of which are prepared in the same manner as the common indigo. The color of the liquid, at first, is a kind of greenish blue, but after being well stirred up and exposed to the air, it bebecomes much darker. I suppose it is thickened afterwards by evaporation; but this part of the process did not come under my observation. I am very much inclined to believe that this is the dye used to color the green teas which are manufactured in the north of China for the English and American markets.

The Chinese Cabbage.—The oil plant (*Brassica chinensis*), is in seed and ready to be taken from the ground in the beginning of May. This plant is extensively grown in this part of China, both in the province of Chekiang and also in Kiangsoo, and there is a great demand for the oil which is pressed from its seeds. For the information of readers not acquainted with botany, I may state that this plant is a species of cabbage, producing flower stems three or four feet high, with yellow flowers, and long pods of seed like all the cabbage tribe. In April, when the fields are in bloom, the whole country seems tinged with gold, and the fragrance, which fills the air, particularly after an April shower, is delightful.

Mode of Extracting Tallow from the Tallow Tree.—The seeds of the tallow tree (*Stillingia sebifera*), are picked at the commencement of the cold weather in November and December, when all the leaves have fallen. This I saw at Singkong when out shooting in the Sah-hoo Valley, close by our quarters, through the village. The seeds are in the first place taken to the building where the process of making the tallow is carried on, and picked and separated from the stalks. They are then put into a wooden cylinder, open at the top, but with a perforated bottom. This is placed over an iron vessel (about the same diameter or rather larger than the wooden cylinder, and about six or eight inches deep), containing water, by which means the seeds are well steamed, for the purpose of softening the tallow and causing it more readily to separate. The furnace I saw had four or five iron vessels in a row, was about three feet high, four or five feet broad, and eight or ten feet long. The fire was placed at one end and fed with the husks of the rice, dry grass, and such like cheap materials which make a great flame, and the flue was of course carried directly under the whole of the iron vessels.

When the seeds have steamed ten minutes or a quarter of an hour, they are thrown into a large stone mortar, and are gently beaten by two men with stone mallets for the purpose of detaching the tallow from the other parts of the seed. They are then thrown upon a sieve, heated over the fire, and sifted, by which process the tallow is separated, or nearly so, although they generally undergo the process of steaming, &c., a second time, that nothing

may be lost. The other part of the seed is ground and pressed for oil.

The tallow now resembles coarse linseed meal, but with more white spots in it, and derives its brown color from the thin covering over the seed (between it and the tallow), which is separated by the pounding and sifting. In this state, it is put between circles of twisted straw, five or six of which are laid upon each other, and thus forming a hollow cylinder for its reception. When this straw cylinder (if I may so call it), has been filled, it is carried away and placed in the press, which is a very rude and simple contrivance, but which, like everything Chinese answers the purpose remarkably well. The press consists of longitudinal beams of considerable thickness, placed about a foot and a half, or two feet, asunder, with a thick plank at the bottom, forming a kind of trough, and the whole is bound together with iron. The tallow is pressed out by means of wedges driven in very tightly with stone mallets, and passes through a hole in the bottom of the press into a tub, which is sunk there to receive it. It is now freed from all impurities, and is a semi-fluid of a beautiful white color, but soon gets solid, and in cold weather is very brittle. The inside of the tubs, which collect the tallow, is sprinkled or dusted over, with a fine red earth, well dried, which prevents the tallow from adhering to their sides. It is thus easily re-removed in a solid state from the tubs, and in this condition the cakes are exposed for sale in the market. As the candles made from this vegetable tallow have a tendency to get soft and melt in hot weather, they are commonly dipped in wax of various colors, as red, green, and yellow. Those which are intended for religious purposes are generally very large, and finely ornamented with golden characters.

The cake, or refuse, which remains after the tallow has been pressed out of it, is used for fuel, or to manure the land, and so is the refuse from the other part of the seeds from which oil is extracted.

GUTTA PERCHA.

Gutta Percha is a vegetable substance, which, though only known to us for a few years, is now extensively employed in the arts for various purposes, as a substitute for India rubber. According to Sir W. J. Hooker, the tree from which it is obtained belongs to the natural order Sapotaceæ, found in abundance in the island of Singapore, and in some dense forests at the extremity of the Malayan peninsula. Mr. Brooke states that the tree is called *niato* by the Sarawak people, on the island of Borneo, and that it attains a considerable size, even as large as six feet in diameter. The timber, however, is said to be too loose and open for the purposes of building, but the tree bears a fruit which yields a concrete oil used by the natives as food.

The name "gutta percha" (pronounced in English, gut-ta per-tsha), is a Malay term and signifies ragged gum. It is contained in the sap and milky juice of the tree and quickly coagulates on exposure to the air; from twenty to thirty pounds being the average produce of each tree. For collecting the sap, the trees are felled, barked, and left dry and useless. The gutta, or gum, in its crude state, is received in scraps, blocks, or in rolls of thin layers. It is first freed from impurities by deviling, or kneading in hot water, when it is left soft and plastic, of about the consistency of putty.

When thus prepared, the gutta has many curious properties. If placed in water of a temperature of 110° F., no effect is produced upon it; but when the temperature is raised to 145° or upwards, it gradually becomes soft and pliant, as to capability of being moulded into any form, or of being rolled out into flat plates. When in the soft state, it becomes somewhat elastic, but as it cools, it gradually regains its original hardness and rigidity, and appears, when cut, or broken, like horn. It may be softened and hardened any number of times without injury to the material. When cooled, unlike India rubber, it has little elasticity; but it has such strength and tenacity, that a slip, one eight of an inch in diameter, has sustained the weight of 42 pounds.

Gutta percha, like India rubber, is soluble in coal naptha, oil of turpentine, ether, or in caoutchoucine; but it is not acted upon either by alcohol or water. In solution, it is also applied like India rubber for rendering cloth water proof. It is likewise employed for numerous purposes for which leather is used, such as belting for machinery, harnesses, bridles, straps, clasps, belts, clock springs, soles of shoes, &c. The material is also applicable to the manufacture of numerous other articles of use and ornament, as surgical instruments, engine hose, water pipes, door handles, walking sticks, chess men, picture frames, book covers, handles of knives and swords, buttons, combs, flutes, &c., &c. In short, it promises to become quite, if not a more important article in commerce and in the arts, than India rubber itself.

It is stated, on good authority that there are two kinds of gutta percha—one light, and the other dark-colored. Specimens of young trees, from which this substance is obtained, are now flourishing in the Royal Botanic Garden, at Kew, near London; but whether they are sufficiently hardy to withstand the climate of any part of the United States, we have not means of knowing.

Utility of the Bloom on the Surface of Fruit and Leaves.—On the cuticle of the plum and some other fruits, as well as on the surface of the leaves of some plants, we find a bluish, dry powder commonly known by the name of "bloom," which is merely a resinous exudation, and which it is difficult to wet by means of rain or dew. As the water falls, or collects on them, it trickles or slides off, in large drops, without causing injury or rot.

Benefit of Adding Clay or Marl to Sandy Land.—Fifteen bushels of clay, or marl, spread uniformly upon every square rod of land, plowed under and well incorporated with the soil, would change its nature to such a degree that it might be called a sandy loam, which is the second or third best earth for general crops.

Permanent Cutting Teeth in Colts.—A colt has no permanent incisor teeth till he is two and a half years old, and then only the two front or centre ones.

COST AND PROFITS OF RAISING WHEAT, INDIAN CORN, &c., IN DIFFERENT PARTS OF THE UNION.

THE question is often asked, how much does it cost to raise a bushel of wheat, or corn, in different parts of the United States, and how do the profits attending their culture compare with each other, &c. For the benefit of these persons, and all others, who are interested in this subject, we condense, from the last Report of the Commissioner of Patents, the following statements from gentlemen in different sections of the country, which, we trust, will afford the information desired:—

Statement of Harvey Huntoon, of Unity, N. H.—In compliance with your request to procure accurate accounts of the cost of producing crops of wheat and Indian corn in the vicinity of my residence, I herewith transmit my estimates of the same with a succession of hay crops until the ground again requires to be plowed for corn and wheat.

Seed corn ¾ bushel per acre, worth,	$0.50
Interest on land,	1.50
Plowing,	3.00
Planting,	2.00
Hoeing,	2.00
Harvesting,	2.00
Threshing,	1.00
Manure,	8.00
Total cost,	$20.00

Average crop forty bushels, worth 75 cents per bushel.

Value of product,	$30
Cost,	20
Gain,	$10
Wheat next year, two bushels per acre when prepared for sowing, worth,	$4
Interest on land,	2
Plowing,	2
Harrowing,	1
Harvesting,	5
Threshing,	2
Manure,	7
Cost,	$22.00
Average worth,	$1.34
Value of 20 bushels,	26.00
Cost,	22.00
Gain per acre,	$4.00
One ton of hay per acre annually for ten successive years, one fourth clover seed sown with the wheat, worth,	$0.75
Interest on land for ten years,	15.00
Manure,	9.00
Harvesting,	20.00
Total cost,	10)44.75
Cost per ton,	$4.47
Average worth per ton,	6.00
Value of 10 tons,	60.00
Cost,	44.75
Gain on hay,	15.25
" " wheat,	4.80
" " corn,	10.00
Gain per acre for twelve years,	$30.05

If we deduct the value of the corn fodder which I estimate at four dollars, it will reduce the cost to forty cents per bushel; also the wheat straw is estimated at two dollars, which would reduce the cost to one dollar per bushel. In preparing the ground for corn, about forty loads of manure to the acre are required to make a succession of good crops, which I estimate at fifty cents per load, and expense of putting it upon the land at four dollars ($24); therefore eight dollars of which is estimated for the corn, seven for wheat, and nine for the hay crop. By treating our poor soil in this way, it would probably produce good crops indefinitely.

Statement of John C. Ambler, of Bethlem, Ct.—The Hon. T. Smith handed to me some time since a circular issued from the Patent Office, requesting information as to the cost of producing wheat and Indian corn, to which I should have sooner attended, had I not mislaid the communication.

INDIAN CORN.

Preparing the ground for seed by manuring, plowing, &c.,	$8.00
Tending, gathering seed,	0.25
Threshing, &c.,	7.00
Interest on land,	3.00
50) $18.25=36½	

Number of bushels to the acre 50. Making the cost of raising a bushel of Indian corn, 36½ cts.

There is no wheat raised in this vicinity, and but little in the state. I can give no accurate information respecting it.

Statement of A. Doubleday, of Binghampton, N. Y.—I will give you the result of my experience and observations respecting the cost of producing crops of wheat and Indian corn, in this vicinity.

I estimate the value of our wheat lands, in a good state for a crop, at twenty dollars per acre.

Interest on this at 6 per cent,	$1.20
Three plowings,	4.50
Harrowing thoroughly,	2.25
One and a half bushels of seed and sowing,	1.63
Harvesting with a cradle,	1.00
Threshing and cleaning,	2.00
	$12.63

I estimate the average yield on good land, well tilled, at twenty bushels per acre, making the cost sixty-three cents and a fraction per bushel.

I have made no account of the value of the straw, nor of gathering the crop into the barn, nor of tending it while growing, because in stating the value of the land I suppose it to be well fenced, and that the crop will cost nothing in tending, and the straw for cattle fodder and for making manure, is worth more than barn room, cartage from the field, &c.

The averge crop, agreeably to my statement may be greater than the yield of many fields, half tilled,

and sown at an unseasonable time, but I am confident that I have not *overrated* the production, on an average, of good farms in this county, which receive the culture which I have contemplated in my estimate of expense.

Our corn land I would call worth twenty-five dollars per acre.

Interest on which is,	$1.60
Once plowing with double team,	2.00
Harrowing,	1.50
Seed and planting,	1.00
Plaster and putting on the hill,	0.37
Plowing and hoeing twice,	2.00
Cutting by the roots and stacking,	0.75
Husking and threshing,	2.50
	$11.62

Average yield, forty bushels. Cost of production twenty-nine cents.

In this amount I have put down nothing for manuring nor hauling, because the fodder obtained from this crop, being cut up when the kernel begins to harden, in the way now universally adopted here, and carefully saved, is worth as much as a moderate crop of hay made from the same quantity of land; and produces as much manure as is needed for future crops.

Perhaps I ought to explain the fact that it costs less to prepare ground for corn than for wheat. The most approved mode of raising a corn crop is, to plant on sward ground, plowing it but once and turning the upper side perfectly under—then harrowing lengthwise until a good tilth is produced. When the soil is not rich enough, stable manure is first spread on the land.

I would also explain my putting the value of corn land higher than wheat land, by remarking that our river bottom and the adjacent grounds, are the best for corn, and are more valued, though back and more elevated lands produce more and better wheat, being less liable to rust and shrinking.

Statement of J. Shearer, of Plymouth, Mich.—After tendering the highest regards, an answer to the following questions will be forwarded to you.

1st. The interest on the present value of land per acre, on which the wheat crop is grown at 6 per cent.

2d. The cost of preparing the ground for the seed.

3d. The cost of the seed.

4th. The expense of tending, gathering, threshing, and preparing for the market.

In answer to the foregoing questions, it may be stated that lands, in Michigan, vary much in *price*, even of the same quality, consequent on improvement and locality. The value of farming lands range from $1.25 to some thirty or forty dollars per acre. The cost of clearing and fencing over timbered openings, will range from $8 to $12 per acre, and these lands compose the great majority of that now in cultivation. The prairies and plains may be brought into cultivation for a less sum than the lands above described, and they compose but a limited portion when compared with them, so that a supposed valuation will be made, after taking into consideration a general view of the whole subject. Therefore, $10 will form a principal to cast interest on, and as it requires two seasons to mature a wheat crop of the kind mostly raised here.

1st. Two years' interest may be cast on $10,	$1.20
2d. The cost of plowing, sowing, and harrowing,	4.50
3d. The cost of seed, one and a half bushels per acre,	1.40
4th. The cost of harvesting,	1.50
For threshing and cleaning for market	1.50
	$10.10

Average crop this year per acre fifteen bushels, $15) 10.10=67⅓

CORN CROP, 1847.

Interest on land at 6 per cent. per acre,	$0.60
Plowing and harrowing per acre,	1.50
Planting two days, at seventy-five cents per day,	1.50
Cultivating and plowing,	1.00
Hoeing two days,	1.50
Harvesting and shelling,	2.25
	$8.35

Average crop 50 bushels per acre—value per bushel 30 cts.

OAT CROP, 1847.

Interest at 6 per cent. on land,	$0.60
Plowing land per acre,	1.50
Sowing and harrowing,	1.50
Harvesting and threshing,	2.00
Seed, two bushels per acre,	0.50
	$6.10

Oats valued at 20 cts. per bushel.

Average yield, this year, 40 bushels per acre, as you will see no mention made of manure which is set off against the fodder.

That attention is not paid here to manure and seeding which is in the eastern states. The state is new and speedily undergoing the preparation for manure and seeding to clover.

By this statement, the wheat crop falls below the general average crop of our state, from a close examination, even by passing through many wheat fields in several counties of Michigan, and comparing this year's crop with other years, 15 bushels to the acre, as an average amount, is thought full high enough. The past season has been very favorable to the growth of corn and oats.

Statement of S. M. Bartlett, of La Salle, Mich.—In answer to inquiries from the United States Patent Office, inclosed in your letter of the 16th inst., relative to the cost of raising wheat and Indian corn in this vicinity, I send you the following estimates for one acre of each.

WHEAT.

Interest at 6 per cent., on one acre of land at $15,	$0.90
Twice plowing the same,	2.00
Twice harrowing do.,	0.50

One and one third bush. seed wheat, at 15 cts. per bushel,	1.00
Sowing and harrowing in,	0.50
Furrowing and cleaning furrows,	0.50
Harvesting, &c.,	1.50
Threshing and cleaning (by Pitt's separator),	2.00
	$8.90

An acre thus managed may be safely estimated to yield twenty-five bushels ($8.90 divided by 25 =36$\frac{4}{5}$), at the cost of 36$\frac{4}{5}$ cts. per bushel. The above may, perhaps, sound somewhat theoretical, but in practice it will be found nearly correct. In proof, I offer, gratuitously perhaps, the cost of each year's crop, with the yield per acre, drawn from accounts carefully kept from the year 1839 to the year 1846, inclusive.

1839,	cost	27$\frac{1}{2}$	cents,	average yield	44$\frac{1}{8}$	bushels.
1840,	"	32$\frac{1}{5}$	"	" "	24$\frac{1}{32}$	"
1841,	"	28	"	" "	27$\frac{1}{16}$	"
1842,	"	34$\frac{1}{10}$	"	" "	22	"
1843,	"	29$\frac{1}{3}$	"	" "	28$\frac{1}{2}$	"
1844,	"	56	"	" "	12$\frac{1}{2}$	"
1845,	"	33$\frac{1}{3}$	"	" "	26$\frac{1}{6}$	"
1846,	"	38	"	" "	18$\frac{1}{32}$	"

In my estimate, there is no charge for manuring. I cannot say that the crop would not be greatly increased by a judicious application of manure; but the prevailing opinion is, that it tends to promote too great a growth of straw at the expense of the grain.

CORN.

Interest on one acre of land, at $15 per acre, 6 per cent. 6 months,	$0.45
Once plowing sward, clover lea, or stubble,	1.00
Harrowing and furrowing,	0.50
Seed and planting,	0.37$\frac{1}{2}$
Cultivating and hoeing, first time,	0.50
Twice cultivating,	0.50
Husking on the hill,	1.50
Shelling and cleaning,	1.50
	5.82\frac{1}{2}$

An acre, thus managed, will yield fifty bushels (5.82\frac{1}{2}$ divided by 50,=11$\frac{3}{5}$ cents), at the cost of 11$\frac{3}{5}$ cents per bushel. In this crop manure is seldom used. This fact, however discreditable to the intelligence of the mass of our farmers, speaks volumes in proof of the enduring fertility of our soil, which thus unaided, continues to yield an undiminished tribute to the cultivator.

Statement of R. W. Griswold, of Ashtabula, Ohio.—Yours, with inquiries of the Commissioner of Patents, as to the expense of raising wheat and corn in my vicinity, is before me.

Most of our farmers raise wheat for their own consumption only, adopting at different times, sometimes a naked summer fallow and at others following wheat after all corn, potatoes, &c., and occasionally turning in a green crop, such as clover. On farms where much wheat is raised, a naked summer fallow is, as elsewhere, the most common system adopted.

Under the latter system the profits are (without rendering an excess of cost over the others), much greater. Still it is disputable what system is the best, as under the other the profits of a spring crop must enter into the estimate as credit, subject, however, to the loss to the land by two crops instead of one.

Considering a naked summer fallow as the most common method elsewhere, it will, I presume, be most satisfactory to base my estimates on this system.

In the case of corn, my estimates are based on a supposed case where land is so cultivated as to remain in about the same condition; the soils such as on the whole is most natural for corn; that is, dry land free from clay.

On mucky land the crop will exceed fifty bushels, but the expense and risk are greater. On some of our worn-out land, the expense will be much more than the value of the crop. These variable causes will induce a wide difference in the estimates of different individuals.

Question.—What is the expense of raising a bushel of wheat in your vicinity?

Answer.—Fifty cents. Thus,

One acre.

To one third, $5.40 value of man and labor of manuring it,	$1.80
Interest on $20, two years,	2.40
Plowing once,	1.50
Harrowing four times,	2.00
Rolling,	0.50
One and half bushel of seed,	1.50
Sowing,	0.25
Harvesting,	1.50
	$11.45

Cr. by 22$\frac{9}{10}$ bushels (average.)

Any of our rolling lands with stumps and under the above system will yield from fifteen to thirty-five bushels, while under the other the average is not over ten. The use of the land for sheep during the two years, while the crop is off and also sometimes feeding the lambs, are not taken into view.

What is the cost of raising a bushel of corn?

Twenty cents. Thus,

Interest one year on $20,	$1.20
Manure as above,	1.80
Once plowing,	1.50
Second harrowing,	1.00
Planting,	1.50
Cultivating with man and horse,	3.00
	$10.00

Cr. by 50 bushels (average.)

If the expense of harvesting and stock is included, say, $1.75, the amount will be swelled, but we do not generally estimate them as the shucks and pumpkins will generally serve them over the last. The same allowance is made in the case of wheat. The straw pays six per cent. on the threshing, &c.

Statement of Thomas J. Henley, of Washington City.—As a general remark, it is true that wheat can be produced upon prairie land at an expense of not exceeding twenty-five cents per bushel, in good seasons when no misfortune befals the crop. Some seasons the blight cuts off the entire crop. As wheat does not grow two years in succession upon the same land, every alternate year you must

either substitute a rotation of crops, or allow the land to lie idle, which is most generally done. Each prairie farmer must own a sufficient quantity of timber for the purposes of fencing and building. There are three considerations, with many of less importance, which contribute to swell the average expense of producing wheat on the western prairies to probably thirty-five cents per bushel.

I subjoin the expenses of an acre without the cost of the land, for the first crop. For subsequent crops the plowing would be fifty cents per acre.

For plowing an acre of sod, - -	$2.00
One and a half bushels of seed, -	1.00
Putting in, - - - - -	1.00
Harvesting, - - - - -	1.25
Threshing, - - - - -	1.75
Twenty miles to market, - - -	2.00
	$9.00

Your inquiry, however, was as to the expense of production, which would be seven dollars per acre, or twenty cents per bushel, an average crop being thirty-five bushels per acre. There is no rule for estimating the interest on the capital employed, the prices of land are so varying being from $1.25, the government price, to 30 or $40 per acre in the back counties. But you may add every possible contingency of expense, and the price of producing a bushel of wheat cannot exceed 25 cents, the sum you have suggested.

I will add here the result of an actual experiment. A gentleman purchased an eighty-acre lot at $15 per acre, and kept an accurate account of the expenses attending the first crop, including the cost of the land.

For eighty acres of land, $15 per acre,	$1,200
Fencing per acre, $2, - - -	160
Plowing, - - - - - -	160
Seed, - - - - - -	80
Putting in, - - - - -	100
Harvesting, - - - - -	100
Threshing, - - - - -	140
	$1.940

The crop averaged thirty-five bushels per acre, and was sold at seventy cents per bushel. The expense of transportation to market was one hundred and forty dollars.

Cost of land $15, as above, - -	$1,940
Transportation, - - - -	140
	2,080
Eighty acres, 35 bushels per acre,	1,960

Another eight hundred acres were purchased at one dollar and twenty-five cents per acre, with the following results:—

Eight hundred acres, - - -	$1,000
Fencing, - - - - -	1,600
Plowing, - - - - -	1,600
Seed, - - - - - -	800
Putting in, - - - - -	1,000
Harvesting, - - - - -	1,000
Threshing, - - - - -	1,400
Transportation, - - - -	1,000
	$9,400

Eight hundred acres, 35 bushels per acre, 28,000 bushels, 70 cents per bushel, $19,600.

A variety of results of this kind could be given, but this is deemed sufficient to answer the purposes of inquiry. There may be some errors in the figures, which I have not time to look over, but the basis on the calculation may be relied upon.

SLAKING LIME FOR AGRICULTURAL PURPOSES.

LIME, obtained from marble, or limestone, or from marine or fresh-water shells, by depriving it of its carbonic acid by burning, is known by the several names of *burned lime*, *quicklime*, *caustic lime*, and *lime shells*. As a general rule, a ton of good limestone will yield half a ton of lime shells; but the weight of the latter, per bushel, varies with the kind of limestone used, and with the manner in which it is burned. In some cases, a bushel does not weigh more than 75 lbs., while in others, it will exceed 100lbs., which shows how uncertain the quantity applied to land may be when it is estimated by the measure. Hence lime should be bought and applied to the land by weight.

In slaking, burned lime has a strong tendency to "drink in" and combine with water. Thus, when taken from the kiln and exposed to the air, it absorbs moisture and carbonic acid from the atmosphere, increases in weight, swells out, and gradually falls to powder. Or, if water be thrown upon the burnt stone, or shells, it "drinks it in," becomes hot, swells very much, and falls down in a short time to a bulky, more or less white, and almost impalpable powder. When the "thirsty lime" has thus fallen, it is said to be "slaked" or quenched, and is known under the name of "hydrate of lime." If more water now be added, it is not "drunk in," but forms with the lime a mortar, or paste.

When burnt limestone, or shells, is laid up in heaps in the air and is allowed to draw moisture and carbonic acid from the atmosphere, it falls to a powder of itself, and is said to be "slacked," or "air-slacked." In both of the states described above, the lime is hot, or caustic, and may be properly spoken of as *caustic lime*. If spontaneously slaked, that is, if it be in a state in which one half of the lime is combined with water, and the other half with carbonic acid, it may be said to be only *half caustic*.

When lime, whether it exists in a state of a hydrate obtained by slaking, or is in a caustic or half caustic state, is long exposed to the open air, it gradually absorbs carbonic acid from the atmosphere, and is more or less perfectly converted into a carbonate, or in that condition in which it existed before burning. In this state, it possesses no caustic nor alkaline properties, but is properly called *mild lime*.

In slaking lime for agricultural purposes, it is acceded, as a general rule, that the mode, which gives it the greatest bulk, and at the same time reduces it to the most minute state of division, is the best. This may be effected by laying up the burnt limestone, or shells, into heaps in the air, and allowing them to draw moisture and carbonic acid from the atmosphere, where they will fall to powder of themselves. In practice, it is pre-

ferable to cover these heaps with sods, and leave them for several months, till the lime has completely fallen, or slaked, or till the time is convenient for laying it upon the land. Thus it is often carted into the field, in winter, covered up in heaps, and applied to the land, in spring, or summer, when preparing for green crops. The lime seldom becomes very hot when slaked in this way, unless heavy rains happen to fall, when the surface of the lime heaps sometimes becomes so hot as to char and even set fire to the sods by which they are covered, and convert the whole heap into mortar. When thus spontaneously slaked, rich limes increase in bulk from three to three and a half times. Poorer limes, such as contain much earthy matter, may not swell more than double their bulk. This mode is regarded as the least expensive, requires the least care and attention, and exposes the lime least to become chilled and gritty. And besides, it excludes the too free access of the air, which gradually brings back the lime to a carbonate, or mild state.

The following table exhibits the chemical changes which a ton of limestone undergoes, and the relative proportions in which the several compounds exist in it after it has been burned, slaked, and then exposed to the air, or mixed with the soil, as given by Professor Johnston:—

Composition.	Limestone.	After burning.	After slaking.	Spontaneously slaked.	Exposed to the air or in the soil.
	Cwt.	*Cwt.*	*Cwt.*	*Cwt.*	*Cwt.*
Lime, - - -	11¼	11¼	11¼	11¼	11¼
Carbonic acid, - -	8¾	———	———	2¾	———
Water, - - -	———	———	3½	1¾	8¾
Total weight, - -	20	11¼	14¾	15¾	20

Utility of Herbivorous Insects.—It may be but sorry consolation to those who are suffering from the attacks of insects, to tell them it is a part of the great plan of creation that the vast and redundant masses of vegetable matter should be kept in check, and that consequently those families of insects which are destined to this purpose are far more extensive, both as to species and individuals, than such as feed upon animal matter. To say nothing of the great tribes of butterflies and moths, which feed in the caterpillar state almost exclusively upon vegetables, there are several families of beetles employed in the same manner—some feeding upon the solid wood, and others upon the bark, flowers, and leaves.

Differences in the Quality of Barnyard Manure.—Fat cattle yield better manure than those which are lean, or cows in milk, because it contains more phosphate of lime. In lean cattle, the phosphate goes to nourish and build up the bones and horns, and in cows it passes off in their milk.

Temperature of Plants.—Plants with hairy leaves are colder at night than those with smooth ones.

REVIEW OF THE APRIL NO. OF THE AGRICULTURIST.

The Osage Orange for Hedges.—If this tree *does* prove to be a good one for hedges, then I am bold to assert, that in our northern region, the apple tree would prove to be a better one. I do not believe that the Maclura will prove to be fit for hedging, north of latitude 40°, unless it can be acclimated by slow and systematic advance from its home in the south towards our frozen regions. But why go to that trouble, when we have the hardy apple, native among us? The Maclura is just as much a *tree* as the apple. If a "judicious system of heading down" be pursued with the apple, it can be compelled to grow into a hedge, just as well as the other, which must be "far fetched and dear bought." For an ornamental hedge, nothing can exceed the Maclura; but for service in our clime, I certainly would prefer the common apple tree. Who will try it?

Cultivation of Onions.—I notice this article, just to inquire whether any of your readers have ever grown onions upon a reversed grass sod. I once saw, while travelling over the western prairies, the finest onions I ever beheld. These were grown upon the prairie sod, turned over flat, and the seed sown broadcast and harrowed in; most of it, however, only grew in the joints between the furrows, giving the field the appearance of having been sown in drills. No after-culture was given; for there were no weeds, except here and there a large one to be chopped off with a hoe, or scythe. From this, I concluded that the same practice would do well upon the sod of our domestic grasses. Who will make the experiment?

Advantages and Disadvantages of Subsoil and Trench Plowing.—"Disadvantages!" I cannot comprehend how it can be a disadvantage to loosen and stir up the earth we cultivate. [Read the article again and reflect.] The second objection stated, I can understand. The labor of subsoil plowing "drives out of season the other work on a farm." On a farm! What is a farm? Is it 400 or 500 acres of land "deviled over" with less team and men than could work profitably on forty or fifty acres of land, and find time to use the subsoil plow, without being "out of season?" There is no reason in any objection that I ever heard used against trenching any soil on earth. [Read again and reflect.] If it may be detrimental to crops the first year, the permanent benefit will counterbalance it. But the grand difficulty with American farmers is the ruinous system of spreading over a great surface of soil, without ever searching into it. If Congress, instead of enacting the unwise laws they are so often importuned to do, would pass an act that the public land should only be sold, or given to actual settlers, in small parcels, upon condition that the occupants should *plow deep*, they would do something much more worthy of the representatives of a great nation of farmers.

Agriculture of the Chinese, No. 4.—This article is a strong confirmation of what I have heretofore written upon the subject of substituting other fibrous plants, or rather entering into the cultivation of other fibrous plants, in connection with flax and hemp. It does appear to me that there are several which could be more profitably cultivated in some of the

many climes and soils of our great country, than either flax or hemp. There is another thing that ought to be inquired into. It seems almost certain that *gutta percha* will soon become an article of general use. Perhaps the tree producing this gum can be as well grown upon some of our lands in the same parallel of latitude, as it is in its native home in India. But individuals cannot make these experiments—such things should be done by the national government.

Long-Island Lands, No. 3—Oak Barrens.—This process of piling and burning brush, I fear, will be found too tedious. I once tried the experiment myself on similar lands, and it proved unsatisfactory. I would recommend that the bushes be cut when in full leaf, and after being cut just so that they can be laid straight, that they then be laid in winrows, care being observed to put the fine, leafy twigs on the outside, and make the whole as compact as possible. Next, turn a broad furrow on to each side of the winrow, and it will be more than half covered. Before setting fire, cover the remainder with a shovel, excepting here and there a place to start the fire. If the winrows could be covered with mud from some convenient swamp, and the whole thoroughly dried before burning, it would add much to the value of the operation.

The Grape Culture in Ohio.—If any one of your readers have passed over this letter of my old friend Longworth, without reading, I beg of him to turn back and peruse it carefully; for I assure him that it is very interesting to all who desire to know anything about the cultivation of this excellent fruit.

History of the Cast-Iron Plow.—This is a most interesting article, which I should like to see copied into every agricultural paper in the Union. And I suggest to the editor that this should be No. 1, of a series of articles, until he has given us a complete history of the plow, from the earliest ages. This subject should be illustrated with cuts, commencing with the old Egyptian plow, and showing the continual advance in improvement up to the present time, when we have an article that seems as though it had reached almost to perfection. Such a history would be exceedingly interesting. Even the present number, if it had been read by the members of the existing Congress, would have been sufficient to save some of them the disgrace that will ever be attached to their names for voting for the plow-tax law, which you so justly condemn.

Management of Calves.—It seemeth like going to battle with a giant, to offer my humble opinion upon any of the branches of cattle husbandry, in connection, and more in opposition to anything advanced by my worthy friend Sotham. But his writings are so like the energetic go-ahead-itiveness of the man, that he needs calling back a little to explain. The loose remarks about "small calves" are likely to be quoted in favor of saving the life of every little runt of a calf, because Mr. Sotham says that little calves are the best. And certainly not one in ten of those who raise calves, can tell whether the calf is "well proportioned." Rearing calves, by feeding them, is undoubtedly an economical way, but whether they will make better cattle than those that are permitted to run with the cows, I doubt. And I also doubt whether fall calves can be raised, particularly on skim milk, to be equal to spring calves. And certainly Mr. Sotham would not recommend farmers who live far from a daily market, to get in the practice of having their calves dropped in "October, November, or December." If he does, then I shall venture to oppose the proposition.

Ladies' Department—To the Young.—What can I say to aid "a friend" in her appeal to young wives to try to make home, more like what a home should be, to endear husbands to it—to make them know and feel that

"There is no place like home."

The system of education for our girls is so false and foolish, at the present day, that when they come to have a home, they absolutely know nothing about the manner of creating a thousand and one domestic comforts. I would look upon a school that taught the art and mystery of making a happy home, of far more importance than I do much of the fashionable folly, so generally considered as all that is needed to fit a girl to enter upon the duties of a wife and mother.

And now my kind readers, I expect, before you read this number, I shall have crossed "the big pond;" but I hope to return again soon enough, with perhaps a little delay, to keep up my monthly gossip with you to the end of the present volume. I am still your well-meaning friend—REVIEWER.

COLD-WATER BATHING.

For the Benefit of Farmers and Others.—The practice of bathing, it is universally admitted, is not only an act of cleanliness, but is eminently conducive to health. With most persons in active life, the delicate pores of the skin soon become closed by the solid matter of the perspiration or the accumulation of dirt, which require frequent ablution with water, in order to preserve their natural functions. The mere wearing of flannel and washing the more exposed parts of the body, with the daily use of clean linen, is but an imperfect attempt at cleanliness, without being accompanied by entire immersion of the body in water, or by well rubbing it over with a wet towel, or cloth.

Bathing, of some kind or other, is not only conducive to cleanliness, but, both to the physical and mental health of the individual who practices it. For the body cannot be in a healthy condition while the proper offices of the skin are interfered with, any more than would be the case with any of the other excretory organs, placed under similar circumstances. Nor can the mind, dependent as it is on the organization of the body, escape, unharmed, when the animal functions are imperfectly performed. Intellectual and moral vigor are universally promoted by the imperceptible, yet controlling influence of the physical system, and he, who would increase the former, cannot adopt a safer method than that which tends to preserve or improve the health.

It is imagined by many that constant bathing is but little fitted for this country, owing to the changeableness of our climate; and that, an attempt to place a sick man in a bath, in any other than the mildest weather, would be to subject him

to all the horrors of "sniffling, sneezing, coughing, and relapse." That such results from bathing have no existence beyond the minds of the timid, the ignorant, and the prejudiced, must be obvious to every candid person. Even the cold bath, such as is used in the treatment termed "hydropathy," is beneficial when applied with judgment; and it is only when discretion is not exercised, that bathing under any condition ever proves injurious.

Some persons, it is true, are very susceptible of taking cold, and are themselves "living barometers;" but even to them, warm, or tepid bathing, would prove, in many cases, advantageous. One half of the rheumatic twinges, swollen limbs, and cramped joints, would give way to proper confidence and perseverance in this remedy. In short, it must be conceded, that bathing, especially in water at a temperature nearly similar to that of our bodies, is, in itself, one of the most cleanly and health-preserving luxuries, or rather we should say, necessaries of life.

The following is a brief notice of the advantages to be derived from a cold bath, as best adapted for the general purposes of health, or will be of much interest to our readers :—

The temperature of the cold bath varies from 45° to 85° F. In a medical point of view, it is considered both tonic and stimulant when not too long continued. In order to produce its full effects, the bather should feel a pleasant glow upon the surface of the body, immediately on coming out of the water. If the sensation of coldness, or shivering, follow, on entering the bath, the immersion should not be repeated.

In using the cold bath, it is of essential importance to know that there is no truth in the popular opinion, that "it is safer to enter the water when the body is cool, and that persons heated by exercise, and beginning to perspire, should wait till they are perfectly cool." For it is a rule, liable to *no exception*, that *moderate exercise ought always to precede cold bathing;* as neither *previous rest*, nor *exercise to a violent degree*, is proper on this occasion.

The best place for cold bathing is in the sea, a clear river, lake, or pond ; but where none of these can conveniently be had, the bathing tub, shower bath, or wet towel may be advantageously employed.

The morning is a proper time for using the cold bath, unless it be in a river, or lake ; in which case, the afternoon, or from one to two hours before sunset, will be more appropriate. On the whole, one hour after a light breakfast, or two hours before, or four hours after, dinner are regarded as the proper periods of the day for the purpose.

The best preparation for cold bathing for invalids is, to begin with a warm bath, then a tepid one, after which, in most cases, they may plunge with safety into a cold bath. Generally, an immersion every second day from the commencement of warm bathing to the end of a fortnight, will be sufficiently often; after this, the cold bath may be continued daily. Persons in health, and possessing robust constitutions, should bathe year in and year out, at least twice a week, in cold water, and if these ablutions be performed daily, so much the better will it be for their health.

On entering a cold bath, the head should first come in contact with the water, either by immersion, by being showered upon, or by covering it, a minute or so, with a wet cloth. After this, the bather may plunge into the water headlong. As the immersion will be less felt when it is effected suddenly, and as it is of consequence that the first impression should be uniform over the whole body, the bath ought not to be entered slowly, nor timorously, but with a degree of boldness. A contrary method, in some constitutions, is dangerous, as it has a tendency to propel the blood from the lower to the upper parts of the body, and thus predisposes to a fit of apoplexy. For these reasons, the shower bath is attended with considerable advantage, because it transmits the water quickly over the whole body. Therefore, while in the water, the bather should not remain inactive, but apply brisk and general friction, and move his arms and legs, by swimming, or otherwise, in order to promote the circulation of the blood from the heart to the extremities. For, in all cases, it is extremely imprudent to continue in the bath until the body is attacked with a second chilliness.

The duration of the immersion ought to be short, and must be determined by the bodily constitution and sensation of the individual. In summer, a cold bath may be enjoyed by healthy persons for half an hour or more, while in spring or autumn, one or two minutes will be sufficient. Under similar circumstances, cold water acts on aged and lean individuals with more violence than on those who are corpulent and young. Hence, an old man of seventy, even in the hottest days of summer, can seldom remain in a cold bath, with safety, longer than ten or fifteen minutes; whereas, the robust young man of twenty may safely sustain its impression for nearly an hour.

Immediately after leaving the bath, it is necessary that the bather should quickly wipe himself dry with a coarse towel, or cloth. He should not afterwards sit inactive, but if the season permit, he ought to take moderate exercise, till the usual circulation, and the customary action of the muscles be restored.

The principal advantages derived from cold-water bathing, besides cleanliness and salutary exercise, are either the reduction of excessive bodily heat, or the producing of a healthy reaction of the system. It is also serviceable in the treatment of several nervous diseases, as well as gouty and rheumatic complaints; but as this more appropriately comes within the province of the medical practioner, it must necessarily be omitted here.

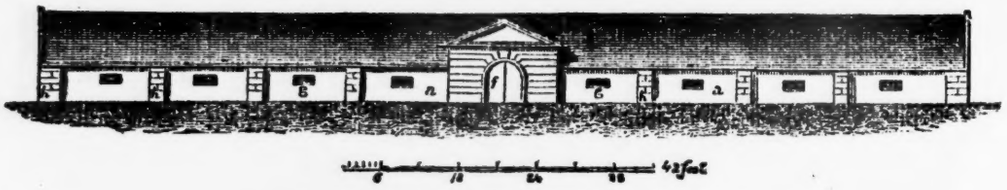
ASH OF THE COMMON POTATO.—In every 100 parts of ashes of the common potato, there are contained the following chemical ingredients :—

Potash,	51.5
Phosphoric acid,	11.3
Sulphuric acid,	7.5
Lime,	2.0
Magnesia,	5.5
Carbonic acid,	13.5
Silica,	5.5
Chlorine,	2.7
Iron,	trace
Soda,	0.8
	99.8

SHEEP YARD AND STABLES.

The sheep yard, in Germany, Hungary, &c., contains the stables for the various flocks, barns for the fodder, sheds for the litter and implements, and the dwelling for the sheep master and his assistants. Generally, the sheep stables are connected with the farm buildings, but in many instances these sheep yards form separate establishments placed at proper distances from the main farm, and near the pasture ground.

The situation for the stables is chosen with regard to health; distant from low wet grounds protected from storms, inundations, &c., near a spring, or creek, for watering the sheep. On the estates of nobles, this kind of building is generally of a pleasant appearance and built in conformity to the teachings of experience. They are mostly brick buildings with a tile roof. They are very roomy, and it is generally calculated that four ewes, with their lambs, require a space of 6 feet square; where six ewes, with their lambs, find room, there can be placed 8 wethers, or 12 head of yearlings. In a



Elevation of Stable.—Fig. 61.

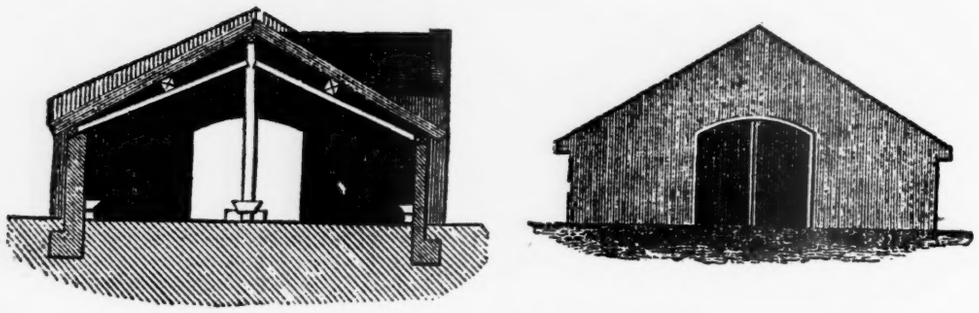
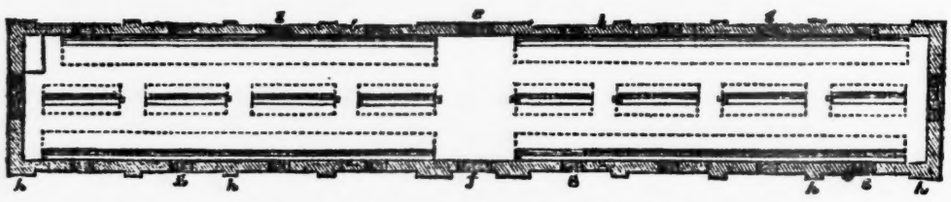


Fig. 62



Ground Plan of Stable.—Fig. 63.

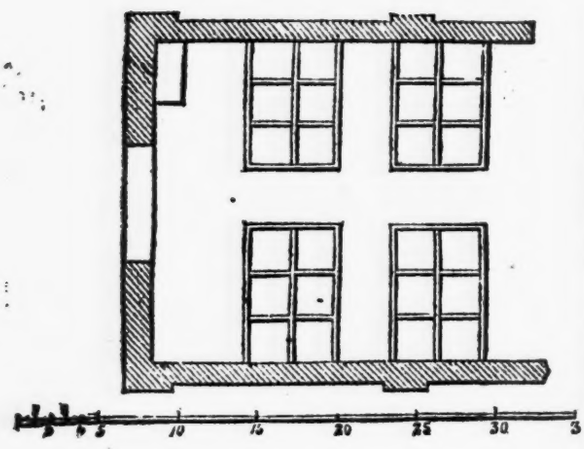


Fig. 64.

stable where 500 ewes can be housed, there is room for 666 wethers, or rams, or for 1,000 head of yearlings. The oblong form is found the best, from 30 to 36 feet in width.

Fig. 61, shows the front view of an oblong stable, in Germany.

Fig. 62, denotes the gable end and roof.

Fig. 63, represents the ground plan with the internal arrangement for the mangers.

Fig. 64, shows the ground plan of the lamb pens.

The walls *a*, *b*, are 5½ feet high, including the foundation; above ground, they are 4 feet in height; *c*, *d*, *e*, *f*, are doors; *c*, *d*, are 7½ feet wide and 7 feet high; *c*, and *f*, are 5 feet wide and 6 feet high; *g*, *g*, *g*, *g*, *g*, &c., are windows with shutters to slide; the windows are 1½ feet wide and one foot high. The walls are one foot thick; in cold climates it will be necessary to make the walls thick, especially toward the north, and of the stables intended for ewes with lambs.

Every six feet along the wall is a pillar of brick, *h*, *h*, *h*, *h*, to give the building more strength.

The construction of the roof is simple. There is a floor to stow hay upon; many sheep breeders prefer stables without floors, because the dust and small particles of hay and straw passing the boards upon the sheep injures the wool.

There are some openings in the roof for the air to circulate—on each side of the walls are mangers denoted by figures 65, 66, and 67, one foot wide of the construction. Fig. 65, is a side view with the rack let down. Fig. 66, a front view, and fig. 67, a side view with the rack put up, when charged with hay, and in the position for the sheep to feed from.

In the middle of the stables are similar mangers for two rows of sheep.

During the lamb season, the lamb pens are put up in the warmest corner of the stable. Fig. 64, shows the mode of putting them together in order to allow room for the shepherd to walk around it, and to see whether the ewes suckle their lambs or not. During the lamb season the shepherd sleeps

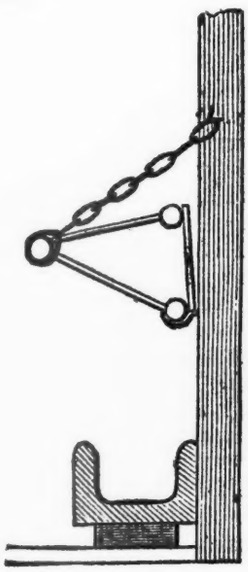


Fig. 67.

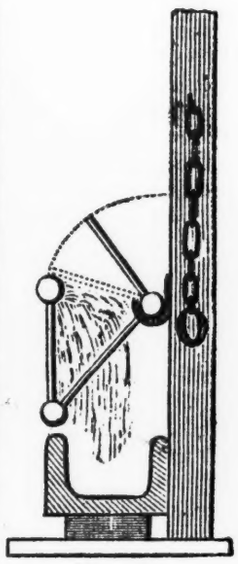


Fig. 65.

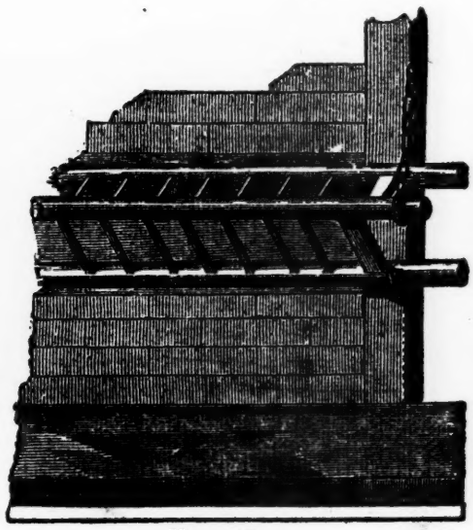


Fig. 66.

in the stable near by the lamb pen.

Fig. 68, represents the front view of a stable built by the viceroy of Hungary, at Alcscúth.

Fig. 69, section of the same, showing the blank roof and floor for the storage of fodder.

Fig. 70, ground plan.

At Von Thäer's, the entrance at each door of the sheep stable consists of an inclined path, of the width of the door, the object of which is to prevent ewes, in a state of pregnancy, from being pressed, or squeezed against the side of the door on entering

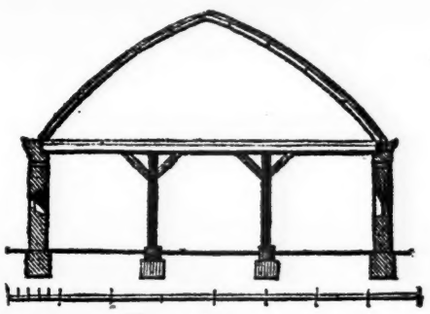


Fig. 69.

Fig. 68.

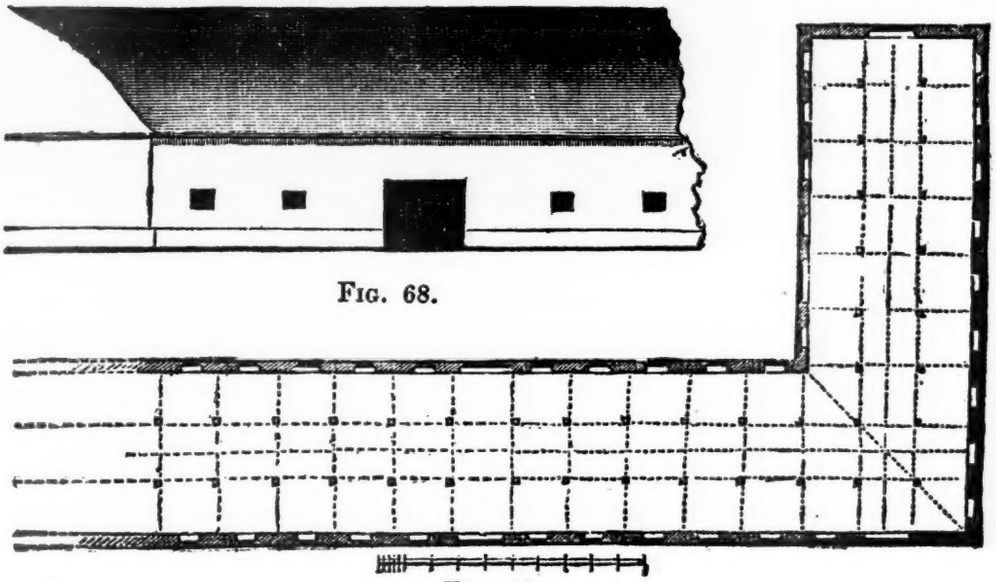


Fig. 70

the stable. The door is about one foot from the ground; to it leads the inclined path as seen in fig. 71, and this path holds just as many sheep as there are spaces between the door posts. Should a sheep force its way to the door, it will displace another on the side, which has to jump off, and take

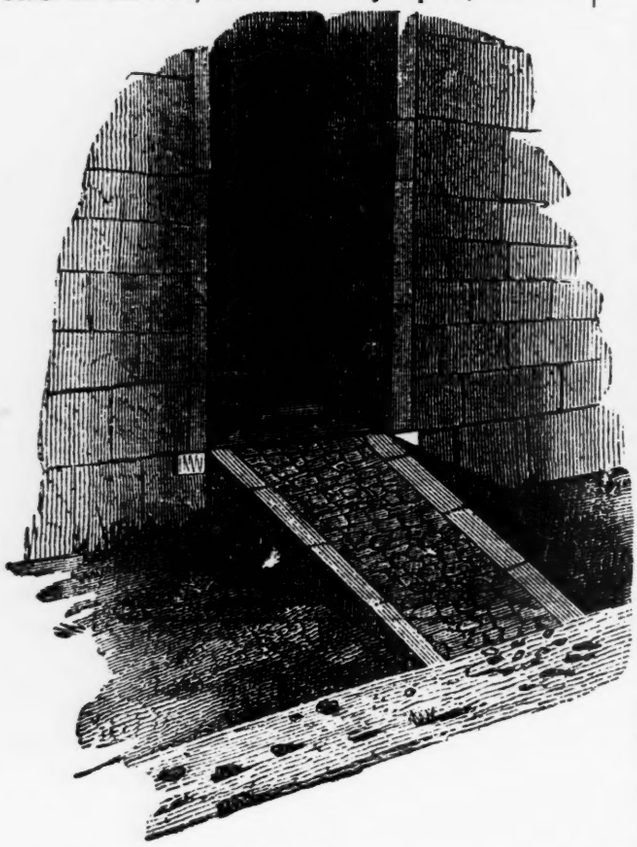


FIG. 71.

its turn with the rest; whereby no injury is done to ewes in a high state of pregnancy.—*Condensed from Patent-Office Report.*

THE USE OF UNBURNT LIMESTONE AS A MANURE.

WILL you, or any of your correspondents, through the medium of the Agriculturist, give reliable information concerning the value of marble, such as is found in Arlington, Vt., as a manure? It has been recommended by some to be equally as beneficial as plaster, and it is believed that it can be obtained in this section of the country at much less expense. S. R. GRAY.

Shuban, N. Y., May 31st, 1848.

In a district where fuel is scarce, and limestone, or marble, plentiful, it might be cheaply crushed into a powder, by means of water power, and thus be economically prepared for improving most kinds of soil which are deficient in lime. But no lands, in which calcareous matter naturally abounds, nor those containing a large proportion of imperfectly decomposed vegetable remains, such as bog roots, moss, &c., can possibly receive any immediate benefit by the use of unburnt lime, unless it be to render them mechanically lighter.

The benefits derived from burning lime for agricultural purposes are partly chemical and partly mechanical; for, while in a caustic state (quicklime), it acts more promptly in producing those chemical changes which follow from mixing it with the soil. Even in the half-caustic state of spontaneously-slaked lime, its effects are more rapid and more quickly seen, than when it is entirely in a carbonate, or unburnt state. But the principal benefits arise from the minute state of division into which the lime is brought by burning and slaking. When the burned limestone is slaked, if it is tolerably pure, the lime falls, or crumbles, to a powder—finer, probably, than any which could be produced by mere mechanical means—finer, certainly, than any to which the farmer could bring it, by any crushing machine he could afford to employ.

The chief advantages to be derived from this fine state of division of lime, are, first, it may be diffused more equally and more universally through the soil, and thus go much farther in improving it; secondly, it more readily combines with acid substances in the soil, and therefore sweetens it more readily and more quickly; and thirdly, it comes into closer contact with the organic substances in the soil, such as roots of grass, straw, leaves, &c., and thus promotes more fully those chemical changes which are constantly going on in every fertile soil, to produce which, is one of the useful purposes for which lime is added to the land.

The above remarks are not intended to apply to such beds of impure limestone as may be employed for the manufacture of cements and hydraulic mortars; for these, when burnt and ground to a powder, cannot be applied for the improvement of land in the usual way, without combining with the water, or moisture, in the soil and shortly become as hard as stone.

ECONOMY IN BUILDING MATERIALS.

FARMERS and others of this country too frequently build for temporary use. It would be much better for themselves, and surely for their posterity, were they to employ, in the construction of their dwellings and out-buildings, the most durable materials to be had. The habit of building in the manner which has long been practised, had its origin from necessity—to supply the immediate wants of the early settlers. Since that time, the necessity, in most of the states, has been removed. From the cheapness of labor, and the abundance of materials, buildings may now be erected, which, with slight repairs, will last a century.

All kinds of lumber, hitherto employed in the construction of houses, every year, are becoming more and more scarce, and the sooner their use is discontinued, the better it will be for the present and future generations—and give place for their inexhaustible and better substitutes, iron, bricks, and stone.

The outer walls of buildings might be constructed of bricks or stone; the beams and rafters may be formed of wrought or cast iron; the roof may be covered with copper, slate, iron, or tin; and the covering of roofs, partitions, floors, &c., can be made of copper, iron, or tin.

The time is fast approaching when buildings can

be built as cheaply after this manner, as they are at present with wood, being, at the same time, exceedingly neat, beautiful, and convenient, and finished agreeably to the taste and means of the occupant. The design and patterns for casting the materials of one farm house might serve for those of another.

The advantages of such a house are almost an unending durability; comfort, both as regards heat and cold; facility of being kept neat and clean; and proof against fire, rats, and mice.

Woollen and cotton mills, railroad depôts, and ware houses of all kinds should be constructed after the manner suggested above, and my word for it, all parties interested, never would regret it.

H. Cooke.

Tivoli, Dutchess Co., N. Y.

MODE OF MANUFACTURING POUDRETTE AT PARIS.

The most common and well-known manufactured manure is doubtless the *poudrette*, which is prepared from the contents of privies, and contains the earthy phosphates in connexion with fecundant and animal matters. An extensive factory, established at Montfaucon, at the very gates of Paris, gives great value to fecal matters by reducing them to a suitable condition for transportation to a distance. Thus a large amount of material, which in other large cities is useless, becomes transformed, by some skill, into a source of profitable revenue.

But it must be remarked, that this mode of preparing the poudrette is very imperfect, as it not only incommodes the vicinity, but occasions a loss of a great part of the gases most useful to the vegetation. As the method is still in prevalent use, we deem it necessary to give a more correct process. It is briefly as follows:—

The operation is conducted in six or seven perfectly tight large reservoirs, placed in an elevated position and above the neighboring dwellings. These cisterns are arranged with coupling connexions so that they may be united together, or disconnected, at will. One of them, much more elevated than the rest, is also of a proportionally greater capacity. This is the recipient for all the collected feces of the city of Paris, which is emptied in from casks specially appropriated for its first reception. The reservoir is of irregular shape, being 330 feet long, 150 to 175 wide, and 30 deep; and it is in this vessel that the liquid is separated, merely by decantation from the solid portion. It is drawn off through a conduit, and, passing through a wicker sieve, falls into one of the vessels beneath. There should be five or six of these receiving vessels, and each of 50 to 80 square yards' capacity; but having to contain less solid matter, they are not necessarily so deep as the upper cistern. As has been remarked, these vats communicate with each other, so that there may be a systematic deposition of the matters suspended in the liquid running from the upper cistern. The thin juices then pass consecutively through all the vats, and are again filtered through a fine wicker which catches the solid particles, and allows the free egress of the liquid into a conduit which connects with a sewer emptying into the Seine.

From this, it will readily be seen that the lower cisterns are a long time in being filled with solid matter; a year or more frequently elapses before one is full. When it is so, after several days' repose, it is freed of its liquid with a pump, syphon, or by drawing off. Each vat is emptied in its turn, and again set for the reception of the thin juices which are constantly flowing from the large upper cistern. This latter, when sufficiently full of solid matter, must, after the excess of liquid has been drawn off, be worked in the same manner as the lower vessels.

The vats of Montfaucon are so badly arranged as to render it necessary, while working the upper vat, to continue adding the nightsoil. Care, however, is taken immediately to separate the more liquid portion and run it into the lower vessel. The process will be more readily and uniformly conducted if there are two reception reservoirs, so that while one is being worked the other can be filled.

The mode of operating and managing the vats is very simple. When the matters have been sufficiently drained, open the gangways leading to the bottom of the reservoirs, and then gradually lift out all the matter. The dung carts empty their contents upon a contiguous field, where it is dried in manner as follows:—The fecal matter is first spread uniformly over the whole extent of the lot, and, after some hours, must be harrowed so as to present new surfaces for evaporation, and thus hasten its desiccation. The harrowing is repeated several times, and until the drying is complete; then the matter must be thrown into piles, and after a proper repose, it is again spread out into thin layers and crushed to powder. The gravel and other coarse impurities with which it may be contaminated are separated by a riddle, or sieve. Thus prepared, the poudrette is ready for use or exportation. In the mean time it is stacked in piles of two or three cubic yards' bulk.—*Dumas.*

IMPORTATION OF PURE-BRED SHEEP.

We had the gratification of examining a superb lot of nineteen Merino sheep, which arrived at this port on the 28th of June, in the ship Argo, from Havre. They were the property of Mr. John A. Taintor, of Hartford, Connecticut, and are the third importation he has made of this breed—the first being in 1846, and the second in 1847. These sheep will probably be followed by a few others equally choice next year. Mr. Taintor's object in these annual importations is, to keep up a succession of fresh crosses in his flock, and thus enable him at all times to supply sheep masters with bucks of different families, in order to prevent the deteriorating influence of in-and-in breeding.

These sheep possess the same characteristics as the first of Mr. Taintor's importation, which we so particularly described at page 266 of our fifth volume. The ewes varied in height (measuring with the wool off, on the bare skin), from 25½ to 29 inches over the withers; and in weight, in moderate condition, from 124 to 153 lbs. The bucks were proportionably large. They not unfrequently weigh over 200 lbs. The fleeces are enormous, of good quality, and very even. In addition to all of the above-named excellencies, these sheep possess fine forms, and have uncommonly good constitutions. Indeed, they have wool enough over them,

and look sufficiently hardy to withstand the rigors of an artic winter.

Those breeders, who desire to obtain a fresh cross in their flocks, increase the size of the sheep, and add to the weight and evenness of fleece, we can confidently recommend to the produce of Mr. Taintor's importation.

A FEW SIMPLE FACTS.

It has frequently happened that valuable lives have been lost by persons who have taken saltpetre (nitrate of potash), by mistake for Glauber's, or Epsom salts. The appearance, and even the taste of these articles are too similar to be readily distinguished by people in haste, or those who are not much in the habit of administering medicines. A very little elementary knowledge of their chemical properties, which are extremely unlike, might prevent intense suffering, or even loss of life from the effect of taking into the stomach saltpetre, instead of either of the intended harmless drugs. Therefore, when a dose of Glauber's salts is to be taken, and the box, or bottle, is not properly labelled, or a suspicion arises, that there may be a mistake, throw a small portion on some burning coals, and if no unusual appearance takes place, if it only damps the fire, or crackles a little, like common salt, it is the desired salts, which are incombustible; but if it is saltpetre (one of the component parts of gunpowder), it will deflagrate, or burn, with sparkling rapidity, and cannot be swallowed without great danger to health.

If, however, the mistake is discovered too late, give as quickly as possible, mustard and water, until it acts freely as an emetic; and when the stomach is well cleansed, give flaxseed tea, mallows tea, or any other tasteless mucilage; and then administer, if necessary, small doses of laudanum.

Laudanum has often been given by inexperienced persons, or by careless, or unprincipled nurses, instead of syrup of rhubarb, or other common medicines, which it much resembles in color and consistence. As soon as it is discovered, if the stomach pump cannot be resorted to, give emetics of mustard and water, repeated at short intervals, until all the laudanum is thrown off; keep the patient in motion to prevent sleep, and then give some warm mucilage.

In order to prevent the excessive, or too long continued effect of an emetic, give Peruvian bark, mixed with water; or if that is not at hand, a cup of very strong tea without sugar or milk, and afterwards a few drops of lavender compound. The nausea can be relieved by the application of a mustard plaster laid over the "pit of the stomach," made by mixing mustard with whiskey, or hot water, and kept on until the skin becomes red, or the burning extreme, say fifteen or twenty minutes. If left on too long, the blister becomes very sore, and is difficult to heal. A piece of *very* thin muslin, or gauze, should always be placed between the skin and the plaster, to prevent it from sticking, and to facilitate its removal.

When arsenic, which strongly resembles magnesia, has been given by mistake, or with poisonous intent, large doses of magnesia speedily administered, will often prove an excellent antidote.

If insects are taken into the stomach, their lives can be destroyed by swallowing strong vinegar, in which salt has been dissolved.

The air of a vault, or well, that has long been shut up closely, is unfit for respiration, and is fatal to animal life, if taken into the lungs. This is owing to an accumulation of carbonic acid gas, which, being heavier than common atmospheric air, naturally sinks to, and remains at, the *bottom* of the cavity, and therefore is not easily detected. Such places should always be entered with extreme caution, and the presence or absence of the noxious vapor ascertained, which can easily be done by lowering a lighted candle to the bottom of the well, or vault. If it continue to burn freely, the air is fit to breathe, and the place may be entered with impunity; but if it promptly extinguish a lighted candle, after repeated trials, danger lurks at the bottom, and means must be taken to expel the gas, before the life of a fellow creature is exposed to certain destruction.

The knowledge of the distinction between arteries and veins is of the utmost practical importance, particularly to people residing in districts remote from surgical aid, where those who receive serious wounds may actually bleed to death for want of such easily-acquired information. The arteries are composed of no less than four very firm, strong, elastic membranes, or coats, and this, as well as their being generally deeply seated in the flesh, to guard them from injury, renders them less liable to be hurt by accident; but when cut, or wounded, the firmness of these coats prevents their closing, and hence arises the fatal tendency of wounds of large blood vessels, which will remain open till they are tied up, or till death ensues. Another distinctive character is, that the pulse of the heart is felt in the arteries only.

The veins lie near the surface; and bleeding from them may readily be stopped, in common cases, by closing the orifice, and bandaging in the manner usually adopted by operators after having opened a vein in the arm, or foot.

When a person, or animal, is seriously wounded, and a surgeon cannot immediately be procured, ignorant by-standers will often content themselves with laying on a little lint, or cobweb, or some other trifling application, wholly inadequate to the case; they ought to know that when such remedies fail, and more especially when the blood flows from the wound by pulsatory leaps, it should be arrested by mechanical compression, until professional aid can be obtained. This can easily be done by the most ignorant person present, by winding a string, or bandage, tightly above the wound. Those more skilful, or better informed, may take up the severed artery, and twist, or tie it up.

By thus acquiring a little elementary knowledge, and thoughtfully bringing it into use, in cases of unexpected peril, we should be enabled to act the part of the good Samaritan with happy effect; whereas, without it, we must be idle, and perhaps agonized spectators of human suffering, deeply reproaching ourselves when too late, with selfish neglect of opportunities for learning what can hardly fail, at some time or other, to be useful to our fellow creatures, in their own persons, or in the domestic animals that, either by their services during life, or by their death, contribute so materially to our comfort and well-being. * M. *

ANOTHER FACT RELATIVE TO THE POTATO DISEASE.

At a late meeting of the Executive Committee of the N. Y. State Agricultural Society, held at Buffalo, Mr. F. J. Betts, of Newburgh, communicated the following information relative to the disease of the potato:—"I have this year planted potatoes in my forcing house, which ripened some three weeks since, and upon digging them I found several entirely rotten. I deem this fact of some importance in ascertaining the nature of the disease, as it certainly refutes some of the theories in respect to it. The house is kept at as even a temperature as practicable, without the use of artificial heat, and the ground is continually moist; neither sudden alternations of heat, therefore, nor sudden changes from dry to wet, can be the cause of the disease. The soil is made 3½ feet deep, very rich, from an admixture of well-rotted manure, muck, and shell marl, and limed very heavily. Such are the facts, and they may assist in arriving at some just conclusions in respect to the disease.

KILLING THE BUFFALO.

No animal requires so much killing as buffaloes. Unless shot through the lungs, or spine, they invariably escape; and even when thus mortally wounded, or even struck through the very heart, they will frequently run a considerable distance before falling to the ground, particularly if they see the hunter after the wound is given. If, however, he keeps himself concealed after firing, the animal will remain still, if it does not immediately fall. It is a most painful sight to witness the dying struggles of the huge beast. The buffalo invariably evinces the greatest repugnance to lie down when mortally wounded, apparently conscious that when once touching mother earth, there is no hope left him. A bull, shot through the heart, or lungs, with blood streaming from his mouth, and protruding tongue, his eyes rolling, bloodshot, and glazed with death, braces himself on his legs, swaying from side to side, stamps impatiently at his growing weakness, or lifts his rugged and matted head, and helplessly bellows out his conscious impotence. To the last, however, he stands upright, and plants his limbs further apart, but to no purpose. As the body rolls, like a ship at sea, his head slowly turns from side to side, looking about as it were, for the unseen and treacherous enemy who has brought him, the lord of the plains, to such a pass. Drops of purple blood spirt from his mouth and nostrils, and gradually the failing limbs refuse longer to support the ponderous carcass; more heavily rolls the body from side to side, until suddenly, for a brief instant, it becomes rigid and still; a convulsive tremor seizes it, and, with a low, sobbing gasp, the huge animal falls over on his side, the limbs extended stark and stiff, and the mountain of flesh without life or motion.

Notwithstanding the great and wanton destruction of the buffalo, many years must elapse before this lordly animal becomes extinct. In spite of their numerous enemies, they will exist in countless numbers, and, could any steps be taken to protect them, as is done in respect to other game, they would ever remain the life and ornament of the boundless prairies, and afford ample and never-failing provision to the travellers over these otherwise desert plains.—*Ruxton's Mexico and the Rocky Mountains.*

AMERICAN HOLLY HEDGES.

The American Holly is the sturdiest and best armed tree in the world, flourishes in all locations, and presents, in a few years, a barrier which defies the inroads of man and beast; and in its red berries furnishes such a grateful repast to the birds, during the winter and spring months, that they, too, are enticed from depredations on the spring crops, and seek shelter and bounty in its thick impenetrable covert. A great error has always prevailed in regard to the uncertainty of transplanting the holly, but from our experience and observation, there is no tree more easily and successfully removed. We have seen them succeed when trees four inches in diameter were taken up, but they had been entirely divested of their tops. Our friend, Mr. Jno. C. Singleton, residing near Columbia, has a garden hedge in front of his house, of several hundred small holly trees, transplanted from the adjacent woods, and lost not a single plant where they were entirely undisturbed.

The holly is easily propagated from the seed, which must be subjected to the following process, which makes them vegetate freely:—In the fall, after frost, take a large quantity and bury them in a heap, in a soil not too moist. Let them remain until spring, when upon their being planted in drills, in finely-prepared soil, they come up quickly, and a number of them make plants enough for transplanting the first year. It is, however, best to leave them till they are two years old, when upon planting, each plant should be cut off to within two inches of the ground. They should be planted in double rows, eighteen inches apart—the trees being broken in the ranks, and distant from each other in the rows, about fifteen inches. After the holly is well set, it requires no artificial culture. It is best, however, to shorten the plants down every year, until the whole wall is a stout barrier of living trunks, and then it may be left to the care of nature.

A holly hedge, or indeed any other, should be planted in the soil prepared with a view to support the growth of the plants for years to come. The best plan is to dig a wide, but shallow ditch, into which, after throwing the top soil, place vegetable mould, muck, animal manure, and, in fact, all such materials and rubbish, usually found about the farm, which is conducive to the growth of trees. When the trees have taken root, and in order to make a good, sound, enduring wood, they should receive a dressing of wood ashes, or old lime. With these precautions, every farmer could have a good hedge in ten years, for the same labor and cost that it would take to keep a rail fence on the land for that time.—*South Carolinian.*

APPLICATION OF MARL.

Marl and sand, you'll have good land;
Marl and clay, you'll throw all away.
Old English Proverb.

CULTIVATION OF THE PEANUT IN EAST JERSEY.

In the May number of the Agriculturist, you state that it would be interesting to know how far north the peanut will grow, or mature its seeds, in the open air. Although the cultivation of this plant has been limited to the south, it may not generally be known that it yields abundantly in East Jersey, near the sea coast, where the soil is light and sandy, provided the season is not too short.

The time of planting, in this place, is about the first of May; and if the vines are kept from the frost until the middle of September there will be a full crop. The nuts are planted in drills, three feet apart and six inches from each other. It is not necessary to start them in hot beds nor by artificial heat, as the growth is sufficiently rapid to render this unnecessary. They vegetate in four or five days after planting, and quickly rise out of the ground, soon after which, a plow, or cultivator, is run between the rows, and then followed with the hoe, carefully drawing the earth around the young vines.

Early in the season, there appears on the vines, near the roots, numerous small, yellowish blossoms, which are soon succeeded by the formation of nuts. At this period, the vines are bent down and covered with earth, barely leaving their tips in sight; which fact has given rise to the idea that the peanut blossoms under ground. This process of burying the vines causes a new set of runners to shoot out, and consequently the formation of another set of flowers and nuts. Hence, as long as the operation of covering is repeated, the yield will be increased; but if the season be short and subject to early autumnal frosts, the crops will be proportionably less.

The nuts are usually harvested soon after the frost kills the vines. If pulled, while the plant is yet a little green, the nuts nearly all adhere to the vines, and may easily be gathered. As soon as they are picked, they are rinsed in water, the earliest and best, selected and carefully dried, for seed, while those intended to eat, or for the market, are kill-dried, or baked with moderate heat.

The yield of nuts, in this place, as far I am able to judge, is about 125 bushels per acre.

J. M. B.

Cedar Creek, Monmouth Co., June, 1848.

FACTS IN REGARD TO CUTTING UNRIPE CORN.—It is stated in the American Farmer, that Indian corn, if cut many days before it is fairly glazed, will ripen, and that, too, in most instances, without any apparent diminution either in quantity or quality of the grain. In several instances, which have fallen under the observation of the editor of that paper, it has, when cut at the roots before the kernels had become fairly "specked," filled even more rapidly than while standing. That the stalks afford nutriment, even for some days after cutting, he says has been fully demonstrated by the fact, that an ear, plucked at the time of cutting, will shrivel and be very imperfect; whereas those that remain, will "fill out" and become sound corn.

SOILS which are chemically and physically alike are agriculturally equal.—*Prof. Johnston.*

YANKEE FARMING.—No. 7.

Good people all of every sort,
Give ear unto my song;
And if you find it wondrous short,
It cannot hold you long.

AFTER the hay and grain harvest is finished, it is customary in our part of the country, for the farmers to take a few days' recreation, as a sort of recompense to the hard toil demanded of them during this very busy season. Among other things that myself and wife, in conjunction with the Doolittle's, had devised to accomplish during these holidays, was a visit to Sisters Sally and Lizzy; for the women folks wanted to have a good set talk, and I was desirous of looking over the farm with their nephew, and also of examining their vegetable garden, which is considered the best cultivated and the most famous in the whole township of A-gok-ne-quaw, save that of Squire Jones.'

In accordance with this arrangement, immediately after dinner, I harnessed my fast-trotting Canadian to a light carry-all, took in my wife and baby, and proceeded to Mr. Doolittle's. We found Aunt Nabby and Molly nicely dressed and waiting our arrival; but as for Uncle Sim, he had been over-persuaded by the boys to give up the old ladies' society, and had gone off on a fishing excursion with them down the clear waters of Silver Brook.

I was a little disappointed at losing the company of Mr. Doolittle in this unceremonious way; but as there was no help for it, I resolved to indemnify myself in the society of the ladies. My carry-all having two seats in it, I could easily accommodate Aunt Nabby and her daughter, and so I told them they had best direct the old mare to be unharnessed from Uncle Sim's heavy chaise, and ride with me. Mrs. Doolittle concluded that this would look more "social like," and as she declared she "hadn't had a sight 'o Miss Teltrue for morn'n as good as a whole livin' week, she was half dyin' to get somebody besides her own folks to talk to, now and then," very readily accepted my offer.

It was a circuitous and retired road that led to the Misses Thompson's, (the family name of Sisters Sally and Lizzy), and though the farms that lay upon it were tolerably well cultivated, little or no attention was paid to the gardens, beyond a small patch of early corn and potatoes, a few rows of beans and peas, here and there a straggling squash and cucumber vine, with an occasional stray melon, a narrow bed or two of stunted onions, beets, and parsnips, and a square rod of cabbages. As for flowers, it was rare to see a few morning glories trained up the sides of the house, and still rarer to find the variegated four-o'clock, or sweet-scented marigold. The gaudy poppy was more common; and nearly every garden had its ample bed of saffron, while the sunflower reared its tall, thick stalk, crowned with a great broad disk, in considerable profusion. But I doubt whether even these last flowers would be cultivated among my neighbors as they are, were it not that the first is a grand family medicine, as they term it, and that the abundant seeds of the latter are useful to make oil and fatten chickens. Not a lilac tree, not a snowball, nor even a rose bush (unless it were a wild one left to flourish, from mere carelessness to cut it down), was to be seen. As Molly sat by my side

while driving, and as we are both extravagantly fond of flowers, and cultivate them to a considerable extent, we could not but wonder at the want of taste on the part of the farmers' wives and daughters, in not giving more attention to these beautiful things, which, if they did, even in a moderate degree, it would make this one of the most delightful rural districts that surround us.

We found Sisters Sally and Lizzy in excellent health, and, primly dressed in the old seventy-six style, waiting to receive us; and as we alighted from the carry-all, they welcomed us with unaffected cordiality. The compliments of the day being passed, the ladies soon got into a regular domestic chat; but, as I took no particular interest in the subjects of their discourse, I soon left them to enjoy it among themselves, and proceeded to hunt up the nephew, who had the superintendence of the farm. I found him at the head of a gang of men just finishing the mowing of a wet meadow. As I came up, he arranged with them to go on with the work, and we then proceeded to walk over the farm a while, and inspect the crops. After tiring of this we returned to the house, when Sister Lizzy undertook to show us the glories of her vegetable garden; for my readers must know, that this is as much a hobby with her as the poultry is with Sister Sally. But the great difference between them, is, that the one excels as much in her department as the other fails in hers, except so far as the rearing of a numerous, incongruous progeny is concerned.

The Garden.—The ground of Sister Lizzy's garden could not have been better situated. It lay east of the house, and commenced with a terrace of light gravelly soil. Descending this, it changed almost instantaneously to a sandy loam, which improved in fertility till it ended at the level border of a wide meadow, with a soil exceedingly rich, and at least, three feet deep. No fruit trees were allowed to grow in this garden, Sister Lizzy contending that they properly belonged to an orchard by themselves; and, moreover, that the shade was injurious to the vegetables, and the roots in the way of the hoe, the spade, and the plow; for she made it a point to work the ground to the depth of two feet, at least, every spring, and keep the surface well stirred all summer; verifying the quaint old saying,

"The more we hoe,
The more we grow."

The sides of this garden were trellised with grape vines, interspersed with the raspberry and blackberry, while the walks were bordered with the currant, the whortleberry, and the gooseberry. Early strawberries were grown on the warm, dry ground of the terrace, and late ones in the cool, rich soil at the foot of the garden. All the other fruits which would bear it were assorted over the ground in the same way; and thus, in this small space alone, they were supplied in sufficient abundance from the first of June till the last of October. In like manner were the early and late vegetables grown. Thinks I to myself, I wish the slender, bustling Madam Lizzy, with her quick eye and shrewd sense, had charge of the department of her fat waddling Sister Sally, she would soon make a change in the breeding of their poultry. All her movements in the garden were directed by an enlightened experience; but prejudice, and old maids' whims, ruled over the affairs of the poultry yard.

We had scarce set our feet upon the terrace, in order to examine the productions of the garden, when, who should appear riding up the road, but one of our assistants in Uncle Sim's late mowing bee, Mr. James Jones. He was mounted on a high-spirited young horse he had just commenced breaking, and moved at a rapid rate. He was about passing the house without recognising our party, when I hailed him to know what was his great hurry. He pulled short up, doffed his hat, and saluted us all round. Sister Lizzy asked him to stop and spend the afternoon. As he was merely riding out for exercise, and had nothing particular on hand, he concluded he would do so.

Influence of the Moon.—Sister Lizzy had just got through showing us her vegetables, and the manner she cultivated them; how she preserved the most perfect for seed, and the best of this seed when fully ripe; the improvement in their quality, and a greatly increased production in consequence of her care, &c. She then turned to the subject of the influence of the moon, and began demonstrating the wonderful effects of its light, particularly in the growth of melons, pumpkins, squashes, gourds, and, above all, her favorite nonpareil, and short prickly cucumbers. After listening to Sister Lizzy at some length, Mr. Jones grew rather impatient under the moonshiny lecture, and ventured to suggest that the mineral and organic matter, which composed the fertilizing part of the manure that she had so bountifully applied to the garden the past spring, was now rapidly decomposing and assuming a soluble shape, so that the plants could easily assimilate them; this, with the superior vivifying light of the sun, and some late genial showers, rather than the moon, were the causes of the rapid growth of the vines and their fruit.

"Mineral, organic, soluble, assimilate, vivifying, genial, nonsense," repeated Sister Lizzy, pouting out her lower lip, and setting her stiffly-starched cap a little one side. "Now, Mr. Jones, don't undertake to out-argue me with your larned terms, picked up at that good-for-nothin' school ye went to so long, when you'd much better been at home studyin' farmin' and gardenin' with your uncle, the Squire; but you wont beat me out o' my notion that moonshiny nights aint good for growin' cucumbers and other things, for I can see 'em; and what I can see with my own eyes, old as they be, nobody needn't undertake to dispute."

"Yes," added the impatient Aunt Nabby, joining Sister Lizzy with the whole force of her voluble tongue, "and I know it, too; and its sartin' true of all livin' critters, as well as garden sarce. Havn't we, Molly," turning round, and appealing to her daughter for the truth of what she was about to assert, "hav'n't we, I say, Molly, my gal, seen the kittens of our old grey cat grow e'en a'most two times as fast these shiny nights back as they did afore the moon quartered; and don't that 'ere calf and lamb of ourn, that we are bringin' up by hand, tho' they be'nt quite six months old, don't they stretch themselves to be a'most as big as some folks' yearlins'? I'd like to have ye to see them, Mr. Jemes Jones." To this he declared, catching the bright

eye of Molly, that he would stop on his way home, and do himself the pleasure that very evening. "Yes, sir, yes," continued Aunt Nabby, "and the chickens, and ducks, and turkeys, too. It warn't no longer ago than t'other day, that I says to my husband, says I, Mr. Doolittle, says I, do you mind how all them 'ere critters do grow these moonshiny nights? 'Wal,' he says back, 'Mammy,' says he—for ye know neighbors, he ollous calls me Mammy when we talk familiar like together—'may be 'tis as you say, all in the moon,' says he, 'but I kinder guess "'tis the airly bird that catches the worm;" "and it aint into a shut mouth that flies is apt to enter;"' for ye know he most ollous will have his old sayin's to begin with. 'Wal, ye know, Mammy,' says he, 'our chickens is pretty airly in the mornin', with eyes and mouths wide open, too, huntin' for breakfast; and, what is more, worms, and bugs, and grasshoppers, and pollywogs, is gettin' plenty now-a-days, and field mice, too, for the kittens; and it don't take much runnin' arter to catch 'em; and, when cotched, they fat all that eats 'em despert fast—tho' I don't mean by this nothin' agin the moon. Then the cosset calf and lamb, we musn't forget the new clover patch, on to which they were turned a fortnight ago; no, nor all the milk and meal you and Molly gives 'em. Wal, it's a poor hide, that clover, milk, and meal, does n't soon fill; and it's a miserable back and belly that they don't soon kiver with wool, that's sartin; yet, we'll let all that pass; but I know this, that the moon ollous makes me grow amazin' fast one way, and that is—everlastin' sleepy,' and so he goed right off to bed. Wal, arter all, I guess it's sartin sure Mr. Doolittle b'lieves as much in the moon as Miss Thompson here, and I does. And Sargeant, now, ye need n't look quite so cunnin' out o' the corner o' yer eyes, and kinder touch up Mr. Jones with yer forefinger; for I sees ye, yes, I do," she sharply continued, "and ye can't hide it; and I know, 'cause yer a readin' man, as Mr. Jones is, and like to laugh at what ye call old women's notions, that ye pretend to b'lieve nothin' about the vartue of moonshiny nights. Wal, ye wont convince me, nor Miss Thompson nother." To which Sister Lizzy nodded assent, "that things do grow faster in the light of the moon than when its dark."

I beg your pardon, Mrs. Doolittle, and that of my excellent friend, Miss Thompson, you quite misunderstand me; for I agree with your husband, that milk, meal, grasshoppers, &c., have something to do with the growth of things; still, I think a good deal of moonshine. If the light of the sun be necessary to produce and perfect the vegetable and animal creation, and the moon shines by its borrowed light, its rays cannot but have a favorable effect upon all growing bodies. Here young Jones was going to add, by way of offset to my partial acknowledgment of the merit of moonshine, that it was all humbug; that the light of the moon, compared with that of the sun, was hardly as one drop of water to the great ocean; but, as he is something of a wag, I gave him a wink, and he checked himself, and went off in a rigmarole of scientific terms that absolutely amazed the old ladies; and, luckily, as they did not understand one word, they took his grandiloquent harangue for a confirmation of their opinions.

"The moon," he said, "is wonderous in its satellitic opacity. Who can count its ubiquitous phases? Who calculate its eccentric obfuscations during its heliacal risings? Its phenomena are unbounded. Its conjunction unexplainable with the periphery of its diurnal mundicity; especially when the gibbous apparent coincides with the cornal crescent, and becomes a quadrature upon the syzygies of the octant line, and its nodes are at the unprecedented angle of its grandest symmetrical perturbation. Then is the time of her apogee; and then commences the subtended evection to perigee."

"Apogee and perigee! That's it," said Aunt Nabby triumphantly; "and don't I see 'em every time I look in the almanac. Wal, Mr. Jones, I didn't know ye was so wise afore. I kinder guessed you and the Sargeant would at last agree with me, and Miss Thompson, and my husband. It ony takes a little explainin' to convince even the most stubbornest folks livin'."

Here my horse and carry-all were brought to the door; and, as we had taken our tea, and it was getting towards sundown, my wife interrupted Aunt Nabby, by saying we ought to be on the move home. To this she readily assented; and after bidding good evening to our kind hosts, and promising to renew our visit as soon as convenient, we, with our darling baby, left them for our own domicils. SERGEANT TELTRUE.

VENETIAN, OR TANNERS' SUMACH.

THE Venetian sumach (*Rhus coriaria*), so much used in tanneries, is imported in large quantities from Sicily, and the south of France, and sells at $45 to $50 per ton. It is very distinct from all the American species in its growth and general appearance, with the exception of the Rhus copallinum, and it is superior to them all for manufacturing purposes.

The best mode of forming plantations would be from seeds, which may be imported from Naples, or the south of France. It is of easy culture, and propagates rather freely from suckers. It was fully tested by my father about twenty-five years ago, who imported it from Sicily, and cultivated it successfully in his grounds. He was particularly desirous of having its culture extensively established with us; it being a primeval feeling with him, that the first object of our country should be to render herself *perfectly independent of foreign supplies of all articles which could be produced from our own soil*. And it has always seemed impossible for him, as well as myself, to distinguish between that pusillanimity which once caused tribute to be paid to the Algerines, and the humiliating position of paying tribute for supplies from the limited domains, and pauper-sustained factories of European nations, when the same articles could be produced to any extent within the limits of our own republic.

The Rhus coriaria, being a native of the south of Europe, it will not flourish to the northward of New York. On the light soils of New Jersey, which are there so prevalent, it would, no doubt, do well; but it would probably produce a greater number of shoots in the lower sections of the southern states, where the climate is more congenial and mild. WM. R. PRINCE.

Linnæan Gardens and Nurseries,
Flushing, June 28th, 1848.

Ladies' Department.

DIRECTIONS FOR GATHERING GARDEN SEEDS.

The finest plants of each kind should be reserved, and only the largest fruits, or seed vessels, on each selected for seed. These are generally the first that are formed; for those which come to perfection while the parent plant is in full vigor, will always produce the largest seeds, and as a necessary consequence, the best seeds will produce the finest plants; while those from small, or half-ripened seeds, will be less in size, and their fruit of course, will be inferior in quality to that of the parent plant. Seeds should be gathered as soon as possible after they are ripe, and always on a dry day.

Beans and peas may be pulled up by the roots, spread for a day or two in the sun to dry, taken in at night, or otherwise protected from the dew, and then threshed out on the barn floor. When quite dry, which will be in a few days, they should be barrelled, or boxed up, for sale, after selecting the largest for the next year's planting.

The seeds of cabbages, turnips, and such kinds, should be pulled, and hung in the shade for a day or two, and then the largest pods, which are always on the lower part of the stems, should be stripped off, the seeds beaten out, and shaken in a sieve so openly woven as to retain only the largest.

The seeds of cucumbers, tomatos, egg plants, &c., must be left till dead ripe before they are gathered; then slit open and laid in the shade, on a board, so placed aslant, that the moisture will drain off; and so left till the pulp has dried, when the seeds can be separated by rubbing between the hands.

The seeds of canteloupes and water melons can best be chosen from those of the finest flavor brought to table, and only require to be separated from the pulp and dried.

Squashes, or cymlings, require no care, and are not injured materially if left out all winter, as the skin becomes a hard shell capable of resisting cold and damp; but it is better to house them unbroken until the seeds are wanted in the spring.

Lettuce must be watched closely, or all the best seeds will be carried off by the wind, or eaten by the pretty little yellowbirds. As soon, therefore, as the tops of the plants are covered with their first coat of down, they must be pulled up early in the morning; spread on large cloths on the barn floor, or in the garret; and the next day, all that are ripe can be shaken out, and cleaned in a sieve. Those that ripen after the plants wither, will not vegetate at all, and the produce will not be worth the care bestowed upon them.

Artichokes, salsafy, or oyster plants, have also winged seeds, and are a very uncertain crop, unless closely watched. The birds, too, make a great havock with the best, by tearing open the involucre with their bills, and devouring them before they are mature. As they continue to bloom and produce perfect seeds for a week or ten days, it will not do to pull them up; but the plan I pursue is, to go every morning, while the dew is on them, and with the clippers, cut off all the heads that have the down ready to expand; and examine all the large ones that seem nearly ready, by drawing the involucre carefully open. If the seeds are *white*, leave them for a day or two longer; if discolored, they may be cut, and will mature in drying; spread them on papers, on the garret floor, and in two or three days, they will be fit to clean and put up. The garret should be hot, dry, and capable of being shut up to exclude the wind and rain.

Balm, sage, and most other "herbs," that have uncovered seeds, must be cut as soon as those on the lower part of the stems are black, when they will be shaken out by the wind and lost. Not many of the others will open, but it is better to lose some, than not secure the best.

Carrots, parsnips, &c., perfect only a small portion of their seeds, which can be ascertained, at a glance, being large, well-shaped, and separate readily from their slender foot stalks. These only need be gathered, as the others never vegetate.

For planting, corn take only the largest grains from the middle of the most perfect ears, rejecting those badly shaped, and the small ones near the ends of the cob.

These rules should always be followed when quality is of more consequence than quantity, and may be carried out in a large scale with the field seeds on the farm, as is done by the best practical farmer in my neighborhood. As his grain is brought to the barn, he takes each sheaf and shakes it over a large box, into which the full ripe grains fall, and are reserved for seed. E. S.

Eutawah, July, 1848.

CAUTION IN THE CHOICE OF CULINARY UTENSILS.—No. 2.

Another class of metallic vessels, employed in cooking, particularly worthy of notice, are those coated internally with a kind of enamel, prepared without the admixture of lead, or any other poisonous ingredients, and consequently no bad effects can ensue.

Vessels of the above description are now manufactured both in Europe and in this country, the invention of which is considered to be one of the greatest improvements recently introduced into domestic economy, such vessels being remarkably clean, salubrious, and adapted to the delicate culinary operations of boiling, stewing, making of jellies, preserves, &c. Not only are small saucepans and stewpans covered with this enamel, but large iron boilers, holding twenty-five gallons, as well as fryingpans and gridirons. The use of these utensils cannot be too strongly recommended. C.

Farmers' Wives in Olden Times.—The duties of farmers' wives, in England, in olden times, were somewhat different, than is at present the case in this country. In the reign of Henry VIII., Sir A. Fitzherbert wrote a treatise, entitled the "A Prologue for the Wyve's Occupation," in which he says,

"It is a wyve's occupation to winnow all maner of cornes, to make malte, to washe and wrynge, to make heye, shere corne, and in time of nede, to help her husbande to fill the mucke wayne, or dounge carte, dryve the ploughe, to lode heye, corne and such other, and to go and ryde to the market to sell butter, chese, mylke, egges, chekyns, capons, hennes, pygges, gese, and all maner of cornes."

Boys' Department.

AGRICULTURAL CHEMISTRY, No. 5.

Boys, in my last letter, I explained the manner in which plants obtain their carbon, and told you that this element was derived chiefly from the carbonic acid contained in the atmosphere. It will now be my object to show in what manner the other constituents of air and what contribute to the sustenance of vegetable life.

1. *Oxygen.*—I have already described this gas, and in treating on the absorption of carbonic acid, I explained one method by which it is obtained. It now only remains to say there is but one other source for its supply; namely, the moisture or water, which the roots of plants absorb. These two sources furnish really more oxygen than the plant requires; yet the hydrogen of the water is needed, as well as the carbon of the carbonic acid; consequently, when these two compounds (water and carbonic acid), are decomposed, there will remain a surplus of oxygen to be returned to the air. In this method the growth of vegetation tends to restore to the atmosphere a portion of the oxygen consumed by animal respiration.

2. *Hydrogen.*—The principal source of this element is undoubtedly the water which is taken up by the roots of plants. The constituents of the water (oxygen and hydrogen), being separated, each performs its proper office. The peculiar connexion which the several elements have with various parts of the vegetable structure will be explained when treating hereafter of vegetable organization. Another source of hydrogen is ammonia, though this probably furnishes but a limited supply.

3. *Nitrogen.*—Different opinions have been and still are entertained, as to the manner in which plants obtain their nitrogen, and it is a matter of no little moment to have correct views on this subject. Carbonic acid, oxygen, and hydrogen are supplied in such a manner as to be almost independent of artificial means, and it is therefore of less practical importance to determine and understand the precise mode of their operation than that of nitrogen. The analysis of plants shows that this element is always present in their organization, and the experiments of chemists have proved that they will not grow without it; yet, owing to its inert character, or to an inadequate supply, there may not always be so much furnished by nature as is needed to ensure a luxuriant growth, or abundant yield of grain. Indeed, we are indebted to this element for much of the benefit resulting from the use of some of our best fertilizing agents. The mode of supplying nitrogen by artificial means will be considered when we come to the subject of *manures*.

Among the theories that have been advanced to explain the manner by which plants obtain their nitrogen, one is, that it is derived from the uncombined nitrogen of the air. But the experiment has been made of confining a plant in a limited quantity of air, and it has been found that the nitrogen contained in this air was not diminished by the growth of the plant. Again, it seems quite improbable that an element so inert in its nature, and so difficult even to *force* into combination with other substances, should voluntarily forsake its connexion with the atmosphere, and form a new one in the vegetable constitution. Another opinion is, that the nitric acid found in the air during a thunder shower, and brought down with the rain, imparts its nitrogen to plants; and another that decaying vegetable matter in the soil is the principal source of nitrogen. These several opinions have been discarded by some of our best modern chemists, since the discovery of ammonia in the atmosphere, and this last agent (ammonia), they believe to be the only one for transmitting the element under consideration. Yet it seems quite probable that a portion of ammonia may be supplied as well by decaying vegetable as by the atmosphere. Still, we must regard the atmosphere as the great reservoir from which most of this compound is obtained. Ammonia, you know, is composed of hydrogen and nitrogen, and I have told you that it is very soluble in water, and is always found in rain water. It is always present as a constituent of the air, and consequently, like carbonic acid, is brought to the earth with every shower, and thus brought in immediate contact with the roots of plants. It is absorbed with the water which the roots imbibe; it is decomposed, like water and carbonic acid, and during the life of the plant is not returned to the air.

It has been ascertained by chemists that the quantity of nitrogen necessary to sustain an ordinary crop does not exceed thirty pounds to the acre, though cabbages, turnips, and some other crops carry off upwards of a hundred pounds. All plants evolve nitrogen from their leaves, and this nitrogen is undoubtedly furnished by ammonia.

Production of Ammonia.—We now come to the inquiry, by what means is the ammonia thus abstracted from the air, restored. Although there are several channels through which it may pass into the air, yet the principal one, and the only one now deserving attention, is, the putrification of substances containing nitrogen. As animal substances always abound in this element, their decay, or putrefaction, is always attended with the formation and emission of ammonia. When animal or vegetable substances are in a state of decay, as all the elements they contain forsake their former connexions, they must either form new ones, or remain in the earth or air uncombined. They most frequently form new connexions, and it has been discovered that when a gas is first liberated from any of its combinations, it has a stronger tendency to unite with other bodies than under any other circumstances. This *point of time*, or moment of liberation, is called the *nascent state*. Now, although nitrogen in its natural state may show little inclination to form a union with hydrogen, yet in their nascent state these two gases eagerly combine, and the result is the formation of ammonia. This gas is thus continually forming, so that the atmosphere can never become exhausted.

I have now explained (as plainly and concisely as possible), the manner in which the several essential constituents of the atmosphere are made to contribute to the growth of vegetation. My next business will be to point out the constituents of the soil, and show in what manner their influence is exerted.

J. McKINSTRY.

Greenport, Columbia Co., N. Y.

FOREIGN AGRICULTURAL NEWS.

By the arrival of the steamer Niagara, we are in possession of our foreign journals to the 1st of July.

MARKETS.—*Ashes*, little doing. *Cotton*, a decline of $\frac{1}{8}d.$ per lb. *Flour & Grain*, dull and falling. *Provisions*, the same. Owing to the late terrible insurrection in Paris, and the continued continental difficulties, business generally is seriously affected abroad.

Money still continues abundant, more for want of knowing how to safely use it, than from any other cause.

The Weather was fine and crops promising.

Abolition of Cotton Manufactures in Egypt.—Ibrahim Pascha appears to have the intention of gradually abolishing the manufacture of cotton cloths in Egypt, and has recently discharged from his service the chief superintendent of his cotton mills. This is generally considered a very wise step on his part, as manufactures can always be imported from England and the United States at a cheaper rate than they can be made in that country.

The Aberdeen Bee-hive Strawberry Condemned.—Professor Lindley, the editor of the London Gardeners' Chronicle, in speaking of this hitherto famous variety of strawberry, describes it as very much like the "Grove-end scarlet," if it is not the same. He says that it is a poor thing, and wholly undeserving the character of either a novelty or any improvement.

How to Kill Cockroaches.—White arsenic (ratsbane), spread on cucumber rinds, if eaten by cockroaches, it is said will kill them.

Proposed Remedy for the Hoven in Cattle.—At a late weekly council of the English Royal Agricultural Society, Mr. Eaton, of Haverford West, recommended a drink of one quart of new milk, fresh from the cow, as an effectual preventive of the hove in cattle, provided it be administered while the animal is able to walk about.

Mr. Fortune has resigned the curatorship of the Botanic Garden, at Chelsea, England, having been engaged by the East-India Company to proceed to China, for the purpose of procuring tea plants and seeds for their tea plantations in the Himalayas. Mr. Thomas Moore has been appointed curator in his stead.

Seeds from California.—Mr. Hartweg has lately returned to England, with a collection of seeds for the Horticultural Society, after an absence of more than two years, most of which time was spent in California.

Speckled Dorking Fowls.—A correspondent of the London Gardeners' Chronicle, says: "Having myself kept the pure speckled Dorking now for nearly twenty years, without ever experiencing, in a single instance, their liability (as complained of by a correspondent in your last), to pine away and die just when attaining maturity, it seems only just to the merit of this breed of birds to state that such-and-such-like maladies do not appear to be necessarily connected with the Dorking fowl. Having been careful to introduce a fresh and well-selected cock bird or two into the walk every second or third year at furthest, I have found the race uniformly hardy, healthy, and prolific.

Devonshire Butter.—Scald your cream, in a zinc pan, over a charcoal fire; but do not let it boil. When the cream is cold, say the next morning, take it off with the hand. Put the cream into a wide wooden bowl; stir it with the hand for ten or fifteen minutes; and the butter will be the same as out of a churn, and to be dealt with the same. A cow that will make one pound of butter per day, that is seven pounds per week, if the cream is scalded, it will make nine pounds in the seven days. Great care must be taken not to let any dust rest upon the cream.—*Gardeners' Chronicle.*

Butter Making.—Lord Clarendon recommends the following mode of making butter:—Put as much milk as cream in the churn. This, he says, improves the color of the butter. Put as much hot water around the churn as will raise the temperature of the whole to 62° or 63°F. This will always insure the butter to come from 20 to 30 minutes, which will be of better quality than if it were longer or shorter in churning.

Prolific Duck.—Mr. James Howard, farmer of Sollon, has a duck that lately sat upon twenty-one eggs, from which she brought out twenty ducklings, eighteen of which are now living. Seven days after she had hatched, she commenced laying again. She is a half-bred, between the wild duck and the tame.

Importations of Cider into England.—Large importations of cider are at present taking place from the channel island of Jersey, into this country, at some of the ports on the coast, as well as the metropolis. Some arrivals of this esteemed summer beverage have also taken place from the United States.

Twin Colts.—A farmer, residing at Kingston, has a mare with two colts. They were foaled on the 19th of May last, and are quite well, and give promise of becoming strong, healthy horses.—*Kentish Observer.*

Selling Live Stock by Weight.—In the sale of fat stock, living weight seems the proper way of obtaining a fair transaction; this was the opinion of Lord Kames, which is still of great weight. He gives the following division of the ox and sheep:—

Ox.—The four quarters....$\frac{1}{2}$ of living weight.
The skin.....1-13th do.
Tallow.....1-12th do.

These make 23-36ths of the whole. The head, feet, tripe, and blood, give the remaining third.

Sheep.—The four quarters....$\frac{1}{2}$ of living weight.
The skin.....1-11th do.
Tallow.....1-10th do.
Offals, less than.....$\frac{1}{3}$ do.

Without entering into minute calculations, a knowledge of the living weight would render the transaction fairer for both parties, as, at present, the butcher offers according to what his experience leads him to suppose is the weight.—*Gardeners' Chronicle.*

Monstrous Potato Stalk.—A correspondent of the Dumfries Courier, says: "There is at present growing within a house at Dalswinton village, a single potato, the shaw, or stalk of which already measures seven feet two inches in length." He calls this monstrous murphy a "*rara avis!*"

Importation of Cheese into Great Britain, in 1847.—The aggregate quantities of cheese imported into the United Kingdom, in 1847 (ending 6th of January, 1848), amounted to 354,802 cwt., including 109,322 cwt. from the United States of America, and 413 cwt. from British possessions abroad. The quantity of foreign European cheese exported from the United Kingdom, in 1847, amounted to 4,834 cwt.

Rearing Canary Birds in a State of Freedom.—A gentleman, in England, is mentioned in the "Times" as having succeeded in rearing Canaries in a state of freedom. These birds built their nests in his garden—one of them in a cyprus tree, having three young ones, the hen having been reared in the open air in July, 1846, since which time she has been generally free to fly about at pleasure. Another nest was built in a magnolia, by a hen, free from the time of her birth (in May, 1846), which contained two young birds, hatched on the 15th of April last. The old birds and the young ones, also (with the exception of one that disappeared), continue their flight about the grounds, coming in to feed. Each hen has now a second brood; one consisting of four, and the other of three young birds, which were expected to take flight in a few days.

Editor's Table.

SOCIAL MEETING OF FARMERS AND GARDENERS.—At the earnest solicitation of our friends, we have concluded to devote suitable rooms at our office, 189 Water street, on the first and third Wednesday of each month, from 12 to 2 o'clock, P. M., to the use of farmers, gardeners, and any others, disposed to come and have a social, informal chat, on the subjects of agriculture and horticulture.

These meetings are to be entirely free from charge of any kind whatever, to those who may please to attend them. There will be no formal speaking, but every person present will be left to pass his time as is most agreeable to him, either in listening to what may be going on, or in conversing with any one to whom it may be agreeable for him to address himself.

All those who may have anything particularly curious, rare, or useful, in the way of plants, flowers, fruits, seeds, vegetables, farm or garden implements, fertilizers, &c., are requested to bring, or send specimens for exhibition; and all those who may have new information to give, on the subject of agriculture or horticulture, are requested to attend and make such information known.

A regular report of the proceedings will be published once a month, in this and other journals.

The first meeting will take place on Wednesday, the 2d of August. The second meeting on Wednesday, the 16th of this month, to which we cordially invite all our friends to come, without ceremony, and bring whatever they may have for exhibition, as specified above.

ANNUAL SHOW OF THE NEW-YORK STATE AGRICULTURAL SOCIETY.—We trust our friends will bear in mind that this great Show takes place at Buffalo on the 5th, 6th, and 7th of September. It will, doubtless, be the largest and best exhibition of farm and garden products, improved stock of all kinds, and agricultural implements, that has yet been made in the United States; and it will be found well worthy the attention of all interested in the noble cause of agriculture. There will be a Great Fair attending the show. A large number of the finest animals will be for sale, as well as the products of the dairy, implements, &c. Those who wish to supply themselves with anything of the kind, will do well to attend and make purchases. See advertisement in this number of the Agriculturist.

PREMIUM TOBACCO.—A premium of $50 for the best hogshead of shipping leaf tobacco, was raised by, and awarded to, Mr. V. B. Carney, of St Louis county, and bought at $5.50 by Mr. Grantham. The second best hogshead of shipping leaf tobacco was raised by Mr. J. Anderson, of Montgomery county, and received a premium of $25. It was bought by A. Meier & Co., of this city, at $4.35.

Mr. Williamson Shaw, of Pike county, raised the third best hogshead of manufacturing leaf, which sold at $10.80 per 100 pounds.—*St. Louis Union.*

AN *Egg*-SAMPLE.—An egg, measuring nine inches in longitudinal circumference, and weighing 5½ ounces, has been shown to the editors of the New Haven Journal. An *egg*-sample for hens in general.

TWO CROPS OF APPLES THE SAME YEAR.—We received yesterday, from Mr. J. L. Kintner, of Harrison county, Ia., a sample of delicious early apple. He gives it no name, says that it originated in Harrison county, grew on trees from four to seven feet high, and that the trees bear a second crop in the fall, of which he says he will also send us a sample. The apple is of good size, fine form, of exceeding beauty, and very delicious. The color of most of the apples sent us, is all over a bright cherry-red, but some are green, with a broad red cheek. We regard it as eminently worthy of cultivation, and request Mr Kintner to forward us a quantity of grafts next winter, that we may propagate some of the trees for the nursery market.—*Louisville Journal.*

THE AMERICAN QUARTERLY REGISTER AND MAGAZINE; conducted by James Stryker, Philadelphia: E. C. and J. Biddle, pp. 304, 8vo. The primary design of this work is to embody, quarterly, a comprehensive record of all the events and facts that belong to the history, the improvements, and the progress of the times in which we live; and thus, at the end of each year, to form a full and accurate book of annals, with documentary proofs and a valuable collection of statistical tables and statements. The number before us, fully corresponds with the above-named design. We should say that the work will resemble in its character the London Annual Register and Littell's Living Age. C. M. Saxton, agent 205 Broadway, N. Y. Price $5 per annum.

NEW JERSEY WATER-CURE ESTABLISHMENT.—Those of our friends who are disposed to avail themselves of the benefits of "Hydropathy," or water-cure treatment, we would recommend to the establishment of Dr. Meeker, at South Orange, in the Orange Mountains, New Jersey, situated only fifteen miles from New York, on the line of the Morris and Essex Railroad.

TRANSACTIONS OF THE N. Y. STATE AGRICULTURAL SOCIETY.—The Transactions of the N. Y. State Agricultural Society, with an abstract of the Proceedings of the County Agricultural Societies, for the year 1847, have been received, and will be further noticed hereafter.

RECENT PUBLICATIONS.—Through the politeness of Messrs. Stanford & Swords, 139 Broadway, we have received the following publications:—Hawkstone; a Tale of and for England, 2 vols., 12mo.; Mark Wilton, the Merchant's Clerk, by Charles B. Taylor, 12mo.; The Vast Army, an Allegory, by Rev. Edward Monroe, 18mo.; and Always Happy! or Anecdotes of Felix and his Sister Serena, written for her children, by A Mother, 18mo. These works are handsomely got up, some of them illustrated, and all adapted for family reading.

A CAUTION TO DRINKING YOUNG MEN.—An old lady resident of a neighboring place, kept a large family of turkeys, perhaps sixty. She, like a great many other people thought a great deal of her turkeys, consequently valued them very highly. Opposite her door was a "West-India goods store." The man one day emptied his cask of cherries, intending to replace them with new. This old lady being economical, thought it a great pity to have all these cherries wasted, and in order to have them saved, she would just drive over her turkeys and let them eat them. In the course of the day the old lady thought she would look after them and see if they were in no mischief. She approached the yard, and lo, in one corner, lay her turkeys in one huge pile, dead. "Yes, they were stone dead." What was to be done? Surely the old matron could not lose the feathers? She must pick them! She called her daughter and picked them, intending to have them buried in the morning. Morning came, and behold there were the turkeys stalking about the yard, featherless enough (as may be supposed), crying out "quit, quit;" feeling no doubt mortified that their drunken fit had been the means of losing their coats. Poor things, if they had said "quit" before they began, they would not have been in this bad "fix." We would advise all young men who are in the habit of drinking, to leave off before they get picked; and to those who do not, let every young lady say "quit."—*Alabama Planter.*

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, JULY 17, 1848.

ASHES, Pots,	per 100 lbs.	$4 94	to	$5 00
Pearls,	do.	5 87	"	6 00
BALE ROPE,	lb.	6	"	8
BARK, Quercitron,	ton,	30 00	"	31 00
BEANS, White,	bush.	75	"	1 38
BEESWAX, Am. Yellow,	lb.	19	"	22
BOLT ROPE,	do.	11	"	12½
BONES, ground,	bush.	45	"	55
BRISTLES, American,	lb.	25	"	65
BUTTER, Table,	do.	15	"	25
Shipping,	do.	9	"	15
CANDLES, Mould, Tallow,	do.	11	"	13
Sperm,	do.	25	"	38
Stearic,	do.	20	"	25
CHEESE,	do.	5	"	10
COAL, Anthracite,	2000 lbs.	4 50	"	5 50
CORDAGE, American,	lb.	11	"	13
COTTON,	do.	4½	"	9
COTTON BAGGING, Amer. hemp,	yard,	15	"	16
FEATHERS,	lb.	30	"	40
FLAX, American,	do.	8	"	9
FLOUR, Northern, Southern and West'rn	bbl.	5 00	"	5 63
Fancy,	do.	6 00	"	6 50
Richmond City Mills,	do.	6 25	"	6 38
Buckwheat,	do.	—	"	—
Rye,	do.	3 50	"	3 75
GRAIN—Wheat, Western,	bush.	1 12	"	1 25
Southern	do.	1 05	"	1 25
Rye,	do.	69	"	70
Corn, Northern,	do.	50	"	54
Southern,	do.	50	"	53
Barley,	do.	60	"	65
Oats, Northern,	do.	45	"	48
GUANO, Peruvian, none in market. 2,000 lbs.		50 00	"	50 00
" Patagonian	do	35 00	"	40 00
HAY, in bales,	do.	40	"	45
HEMP, Russia, clean,	ton.	225 00	"	230 00
American, water-rotted,	do.	160 00	"	220 00
American, dew-rotted,	do.	140 00	"	200 00
HIDES, Dry Southern,	do.	5	"	6
HOPS,	lb.	4	"	6
HORNS,	100.	2 00	"	10 00
LEAD, pig,	do.	3 95	"	4 00
Pipes for Pumps, &c	lb.	5	"	6
MEAL, Corn,	bbl.	2 25	"	2 62
Corn,	hhd.	12 50	"	13 00
MOLASSES, New Orleans,	gal.	20	"	24
MUSTARD, American,	lb.	16	"	31
NAVAL STORES—Tar,	bbl.	1 75	"	2 00
Pitch,	do	75	"	1 00
Rosin,	do.	65	"	75
Turpentine,	do.	2 50	"	2 75
Spirits Turpentine, Southern,	gal.	32	"	35
OIL Linseed, American,	do.	62	"	63
Castor,	do.	1 50	"	1 70
Lard,	do.	55	"	60
OIL CAKE,	100 lbs.	1 00	"	1 15
PEAS, Field,	bush.	1 00	"	1 62
Black eyed, 2 do	do.	2 00	"	—
PLASTER OF PARIS,	ton.	2 25	"	3 00
Ground, in bbls.,	of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,	bbl.	9 00	"	13 00
Prime,	do.	3 25	"	7 50
Smoked	lb.	6	"	10
Rounds, in pickle,	do.	4	"	6
Pork, Mess,	bbl.	9 75	"	12 00
Prime,	do.	6 50	"	9 00
Lard,	lb.	6	"	8
Bacon sides, Smoked,	do.	3	"	4½
In pickle,	do.	3	"	4
Hams, Smoked,	do.	5	"	9
Pickled,	do.	4	"	7
Shoulders, Smoked,	do.	3	"	4
Pickled,	do.	3	"	4
RICE,	100 lbs.	3 00	"	4 00
SALT,	sack,	1 25	"	1 45
Common,	bush.	20	"	35
SEEDS—Clover,	lb.	5	"	7
Timothy,	bush.	2 00	"	3 50
Flax, clean,	do.	1 35	"	1 40
rough,	do.	1 25	"	1 30
SODA, Ash, cont'g 80 per cent. soda,	lb.	3	"	—
Sulphate Soda, ground,	do.	1	"	—
SUGAR, New Orleans,	do.	2½	"	5
SUMAC, American,	ton,	35 00	"	37 00
TALLOW,	lb.	7	"	8¼
TOBACCO,	do.	2½	"	7
WHISKEY, American,	gal.	22	"	24
WOOLS, Saxony,	lb.	35	"	60
Merino,	do.	30	"	35
Half blood	do.	20	"	25
Common do		18	"	20

NEW YORK RETAIL PROVISION MARKET.

Meats.—Beef, from 6 to 15 cents per lb.; Veal, 6 to 12 cents; Lamb, 7 to 10 cents; Mutton, 6 to 9 cents; Pork and Sausages, 8 to 10 cents; Ham and Bacon, 5 to 11 cents; young Pigs, $1 to $1.50 each.

Fish, &c.—Salmon, from 20 to 25 cents per lb.; Sea Bass, 5 to 6 cents; Halibut, 4 to 6 cents; Cod, 4 to 5 cents; Weak Fish, 4 to 5 cents; Blue Fish, 3 to 4 cents; Black Fish, 5 to 8 cents; Poggies, 3 cents; Eels, 6 to 8 cents; Green Turtle, 10 to 12 cents; Lobsters, 5 to 6 cents; Spanish Mackerel, 25 cents each; Crabs, 12 to 18 cents per dozen; Oysters, 50 cents to $1.25 per 100; Clams, 18 to 50 cents.

Poultry and Eggs.—Turkeys, from $1 to $1.50 each; Geese, 62 cents to $1 each; Ducks, 50 to 87 cents per pair; Chickens, 25 to 75 cents per pair; Pigeons, $1.25 per dozen; Eggs, 10 to 13 cents per dozen.

Dairy Products.—Butter, from 14 to 25 cents per lb.; Cheese, 6 to 9 cents; Cheese Cakes, 9 for 12½ cents; Milk, 3 to 5 cents per quart.

Ice.—25 cents per 100 lbs.

Fruit and Nuts.—Bough Apples, from $2 to $3 per bbl.; Strawberry Apples, $3 to $3.50; Apples in small quantities, 12 to 18 cents per half peck; Pears, 75 cents to $1.25 per bushel, or 12 to 15 cents per half peck; Peaches, 25 cents to $1 per basket; Peaches in small quantities, selected, 25 to 50 cents per half peck; Apricots, 25 cents to $6 per 100; Green Grapes, 75 cents per bushel, or 10 cents per half peck; Gooseberries, 10 to 12 cents per quart; Currants, $1 to $1.50 per bushel, or 6 cents per quart; Raspberries, 6 to 8 cents per half pint; Blackberries and Whortleberries, 7 to 9 cents per quart; Oranges, 25 to 50 cents per dozen; Lemons, 18 to 25 cents; Bananas, 25 to 75 cents; Pine Apples, 6 to 18 cents each; Chestnuts, $3 per bushel; Hickory Nuts $2 per bushel; Peanuts, $1.25 to $1.38 per bushel; Cocoa Nuts, 3 to 6 cents each; Pecan Nuts, 7 cents per lb.; Soft-Shelled Almonds, 12 to 14 cents; Filberts, Hard-Shelled Almonds and Madeira Nuts, 8 cents.

Vegetables.—Pinkeye and Mercer Potatoes (new), from 50 to 62 cents per bushel, or 10 to 12 cents per half peck; Onions, 75 cents to $1.25 per bushel, or 50 to 75 cents per dozen bunches; Cucumbers, 50 cents per 100, or 10 cents per dozen; Tomatos, 10 to 12 cents per quart; Pumpkins (southern), 25 to 37 cents each; Summer Squashes, 3 to 4 cents each; Watermelons, 25 to 50 cents each; Egg Plants, 18 to 25 cents each; Green Corn, 8 to 10 ears for 12 cents; Green Peas (in pods), 12 to 15 cents per half peck; String Beans, 12 to 15 cents; Turnips, 37 to 62 cents per bushel, or from 2 to 5 cents for 7; Beets and Carrots, 37 to 62 cents per dozen; Cauliflowers, 12 to 25 cents per head; Cabbages, 1 to 6 cents per head; Radishes, 10 to 12 cents per dozen bunches.

REMARKS.—The only thing worthy of note, since our last, is the fall in flour, which is nearly one dollar less per barrel than last month. Wheat has gone through a corresponding depression, but other grain remains nearly as before. Provisions also have slightly fallen.

The Weather has been very rainy the past four weeks, causing some injury to hay and grain while harvesting. It changed, however, on the 14th of July, to dry, and since that period, has been very fine. We continue to hear a good account of all the incoming crops.

To CORRESPONDENTS.—Communications have been received from Wm. R. Prince, E. S., Sergeant Teltrue, Alexander Walsh, Solon Robinson, J. R. S., and Reviewer.

ACKNOWLEDGMENTS.—The Water-Cure Journal and Herald of Reforms, from Messrs. Fowler and Wells; Fourth Annual Report of the City Missionary, on Behalf of the Destitute Colored Population; The Albany Argus, containing an Account of the Exhibition of the Albany and Rensselaer Horticultural Society, held at Troy on the 12th of July; Manual del Veguero, by Don Jose Maria Dau, of Havana; also, Elementos de Cronologia Universal y particular de Espanna, Isla de Cuba y Puerto Rico, by Don Jose Maria de la Torre, Abogado, etc., of Havana.

SEED WHEAT AND RYE.

THE celebrated White Flint and other superior varieties of Seed Wheat, Spring as well as Winter varieties.

Also, Rye of an excellent quality for winter sowing.

A. B. ALLEN & Co., 189 and 191 Water st. N. Y.

AFRICAN GUANO

FOR Sale at Bating Hollow, Long Island, by

jy3t AZEL DOWNS.

LIGHTNING RODS,

FORMED of copper, or covered iron, with minute directions for putting them up. Prices, from 50 to 75 cents per running yard. A. B. ALLEN & CO., 189 and 191 Water st., N. Y.

STRAWBERRY PLANTS.

WM. R. PRINCE & CO., Sole Proprietors of the Linnæan Gardens and Nurseries, Flushing, N. Y., will transmit their *New Strawberry Catalogue*, comprising every estimable variety, with descriptions, culture, and prices, just published, to every post-paid applicant.

The prices per 1,000 plants are greatly reduced. Strangers will enclose cash with their orders.

The following is from a part of the list only:—

Scarlet and Pine Strawberries.	per doz.	per 100
Abyssinian Prince, P	$2.00	$8.00
Aberdeen Beehive, H	2.00	8.00
* American Scarlet, P	50	2 00
* " Prolific, H	50	2 00
* Bishop's Globe, P	50	2.00
* " Seedling *true*, P	50	2.00
Bishop's Orange, True.		
Black Prince, P	50	2.00
Boston Pine, H	50	2.00
* Brilliant, H	2.00	8.00
Burrs' Seedling, H	37	2.00
" Columbus, P	60	4.00
" Late Prolific, P	1.25	8.00
" Mammoth, H	1.00	6.00
" New Pine, P	1.25	8.00
" Profusion, P	1.00	5.00
" Rival Hudson, P	60	4.00
" Scarlet Metting, P	1.25	6.00
" Scioto, P	1.25	8.00
* Charlotte, P	3.00	10.00
* Chili, H	3.00	10 00
* Cluster Hudson, P	1.00	5.00
* Cornucopia, P	2.00	10.00
Crimson Cone, P	75	3.00
* " Pine, H & P	1.50	6.00
Cushing, H	50	2 00
Eberlein, H	1.50	6.00
* Eustatia, P	2.00	10.00
* Globose Swainstone, H	2.00	10.00
Hovey's Seedling, P	37	1 50
Hudson, H & P	25	1.50
* Illinois, P	50	2.00
Jenney's Seedling, P	50	2.00
* Ladies' Finger, H	2.00	10.00
Large Early Scarlet, H	25	1.00
* Le Baron, H	2.00	8.00
Lizzie Randolph, P	2.00	10.00
* Magnate, P	3.00	15 00
* Magnifique, P	3.00	15.00
Methven, or Victoria, P	25	1.50
* Monstrous Swainstone, H	2.00	10.00
* Primate, H	3.00	10.00
* Primordian, P	2.00	10.00
* Profuse Scarlet, P	3.00	10 00
* Prolific Hudson, P	1.00	5.00
* Prolific Swainstone, H	2.00	8.00
* Refulgent, P	2.50	8.00
* Round White Carolina, H	2.00	8.00
* Serena, H	2.50	10.00
* Theresa, H	2.00	8.00
* Tivoli Scarlet,	2.50	10.00
* Unique Scarlet, H	1.00	5.00
Prairie Strawberries.		
* Camak's Scarlet, H	50	2.00
Iowa, H	50	2.00
Prairie Cluster, P	50	2.00
Pistillate Keen, of Ohio.		
Taylor Seedling, P	50	2.00
Unique Prairie, P	50	2.00
Necked Pine, of Ohio	50	2.00
Wiley, P	50	2.00
Hautbois Strawberries.		
* Green, H	50	2.50
Large Flat Hautbois, H	50	2.50
Prolific Hautbois, H	37	1.50
Alpine and Wood Strawberries.		
* Besançon Alpine, H	75	3.00
Red Wood (English), H	25	1.00
White Wood (English), H	25	1.00
Red Alpine with runners, H	25	1.00
White Alpine, " H	50	2.00
Red Bush Alpine, no runners, H	50	2.00
White " H	50	2.00
Montevideo Pine.		
* 13 Splendid varieties, each	5.00	

NOTE.—H, denotes the Hermaphrodite, and P, the Pistillate varieties. The varieties designated by (*), are not in possession of any other nursery in this town or elsewhere. aug1t.

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MANUFACTURE all kinds of Blank-Books and Stationery articles—Diamond-Point Gold Pens—Letter Copying-Presses—Manifold Letter-Writers—superior Croton-Ink, warranted to retain its jet-black color, which they sell at the very lowest prices.

We have also on hand every description of Foreign PAPER and STATIONERY—Cap, Letter, and Note Papers, Envelopes, Perforated Board, Bristol Board, Drawing-Papers—Copy-Books, Pocket-Books, Card-Cases, Port-Folios, Scrap-Books—Gold-Paper, Tissue-Paper—Chess-Men, Backgammon-Boards—Wax, Wafers, Slates, Pencils—Gold and Silver Pencil-Cases—Writing-Desks—Work Boxes—Quills—Tin Cash and Deed Boxes—and all articles kept by Stationers, at remarkably low prices.

Books suitable for County Clerks and Public Officers supplied.

Printing, Ruling, and Binding executed at the lowest rates.

☞ We should be pleased to have a call from those requiring articles in our line. Orders by mail will receive attention.

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Sept 1yr*

LEAD PIPES FOR HYDRANTS, PUMPS, &c.

Of ¾	inch calibre,	weighing from	1 lb. 8 oz.	to	3 lbs. 8 oz.	per yd.
" 1	"	"	1 " 14	"	6 do 6	"
" 1¼	"	"	2 " 8	"	8 do 4	"
" 1½	"	"	3 " 8	"	10 do 8	"
" 1¾	"	"	5 " 10	"	14 do	"
" 2	"	"	6 " 12	"	17 do 8	"
" 2½	"	"	11 "	"	19 do	"
" 3	"	"	16 " 12	"	27 do	"
" 3½	"	"	23 " 8	"	50 do	"
" 4	"	"	28 "	"	59 do	"
" 4	"	"	45 "	"	80 do	"
" 4	"	"	49 "	"	90 do	"
" 4	"	Water Pipe			15 do 14	"
" 4½	"	"	"		17 do 4	"
" 5	"	"	"		34 do	"

Price of the above pipes from 5 to 6 cents per lb. Tinned pipe, ½ cent per lb. extra.

A. B. ALLEN & CO., 189 and 191 Water st., N. Y.

WATER RAMS.

FOR SALE, Superior Water Rams, which, if applied to a large or small stream of water where there is *one* or *more* feet fall, a portion of said stream may be forced up, by its own power, to a height of 50 or 100 feet. The quantity of water raised will vary according to the height of the fall, the size of the stream, and the capacity of the ram. For instance, any one possessing a spring, or stream of water, that will discharge 8 or 10 gallons per minute, and can stop up the stream by a dam, so as to make a fall of 8 or 10 feet, by means of one of these machines, a constant stream, from a half-inch pipe, can be delivered at an elevation of 85 feet. Prices from $12 to $16—pipe extra. For prices of lead pipe, see advertisement above.

Take Particular Notice.—Persons making application for these rams, by mail, or otherwise, are requested to name the *size* of the stream, or *quantity of water running in it per minute*, the *amount* of the fall they are able to produce, the *height* the water is desired to be raised, and the *distance* it is wished to be conveyed.

my A. B. ALLEN & CO., 191 Water street, N. Y.

FANNING MILLS.

AGRICULTURAL Merchants and Farmers are respectfully informed that the subscriber keeps constantly on hand a supply of five different sizes of his celebrated Fanning Mills, which he offers for sale on the most accommodating terms. These Mills are made of the best materials, and finished in good style, and warranted to clean grain as well and as fast as any others now in use.

TUNIS E. HENDRICKSON,
Jamaica, Long Island.

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Wm. T. Terry, Southold, } *Agents*
Samuel W. Young, Orient, }
my6t*

SEABURY'S OLEAGINOUS OPODELDOC.

NO family should be without this excellent liniment. As a remedy for Burns, Fresh Wounds, Sprains, Bruises, Rheumatism, Pain in the Side, &c. it has no equal. Every man who keeps horses should have a bottle of it about his stable, as it exceeds every other remedy for the speedy cure of Harness Galls, Wounds, Strains, and Diseases of the Limbs of this useful animal.

All orders addressed to the proprietor, at Jamaica L. I. or to Israel Minor, 214 Fulton St., N. Y., will meet with prompt attention. The above liniment may be had at retail by merchants and druggists generally throughout the United States.

T. S. SEABURY, Proprietor, *Jamaica, L. I.*

May be had of C. M. Saxton, at the office of this Paper. jy3t*

HORN SHAVINGS.

HORN SHAVINGS for sale at two cents per lb. They are considered more fertilizing than bone dust.

A. B. ALLEN & CO., 191 Water street, N. Y.

SCHOOL OF APPLIED CHEMISTRY,

Attached to the "Department of Philosophy and the Arts," in Yale College.

B. SILLIMAN, JR.,

Professor of Chemistry and the Kindred Sciences Applied to the Arts.

J. P. NORTON,

Professor of Agricultural Chemistry.

THE Instructors in this Department have opened a commodious Laboratory on the college grounds, where they are now prepared to receive pupils in Special and General Chemistry. The system pursued with those who design to become chemists, or to study the science extensively, is thorough and complete. Such students always commence with an extended course of qualitative examination of unknown substances—and in due time pass through a series of varied quantitative determinations. To those who wish to follow special investigations connected either with the arts, agriculture, or pure science, every facility will be afforded, both in organic and inorganic analysis.

Prof. B. SILLIMAN, Jr., will instruct particularly in general Elementary and Analytical Chemistry, Mineralogy, and Metallurgy, with special reference to their application to the useful arts. He will also give a course of Lectures on Mineralogy and Metallurgy, continued through the summer term. During the fall and earlier part of the winter, he will also carry a class through a course of Elementary Chemistry, in elucidation of the regular course on this subject in the academical department.

The instruction in the professorship of Agricultural Chemistry is intended to unite, as much as possible, practical views with theory; to give the untaught farmer an opportunity to become acquainted with so much of science as shall enable him to reason upon his daily pursuits, and to understand the great principles upon which good cultivation must depend, presented in so plain a form, as to be within the comprehension of all. Few chemical terms will be employed in the Lectures, and those only of the simple explanations; they will thus be understood by those who have never devoted any attention to the subject. A regular course of lectures will be delivered in the winter of each year, commencing in January and continuing about two months, there being four lectures in each week. The subjects of the course will be—the composition and nature of the soil, the plant, and the animal—theories of rotation of crops, and of feeding—modes of draining—the different kinds of manures, their value and how beneficial—the improvement of waste lands, &c., &c. Text books will be indicated for study during leisure hours.

In connection with the lectures will be a short course of Elementary Chemistry, for such as wish to study somewhat more of chemistry than is given in the course, and to qualify themselves for making ordinary testings and qualitative examinations of soils, manures, &c.; this course will occupy two hours of five days in each week during two months.

The fee for the lectures on Agricultural Chemistry will be $10. That for the elementary chemical course, including apparatus and reagents, will be $25.

Students in Analytical Chemistry are allowed to work in the laboratory during the whole day; glass will be furnished (with charges for breakage), also the ordinary reagents and balances for the use of those who are so far advanced as to require them. There will be frequent recitations, and the students will receive the constant attention of one or both of the professors. The fee for this class will be $20 per month.

The vacations will correspond with those in the academical departments, viz.:—six weeks from the third Wednesday of August; two weeks from the first Wednesday in January; and four weeks from the third Wednesday in April of each year. Sessions begin with the close of each vacation, and are at length respectively, 14—14, and 12 weeks.

Students in this school will enjoy all the advantages to be derived from the extended means of the institution in libraries, instruments and collections. The mineralogical and geological collection is widely known as one of the best in the country, and there are smaller collections in the possession of the professors. Those who desire it, can have access to the Lectures on Chemistry, Mineralogy, and Geology, by Prof. B. SILLIMAN, Sen., and to the lectures on Natural Philosophy, by Prof. D. OLMSTEAD.

Instruction is also accessible in the higher Mathematics, in Engineering and the use of Instruments, in Philology, History, Oriental Languages, and Belles-Lettres.

The department of Philosophy and the Arts, in Yale College, of which the school of Applied Chemistry is a part, has been organized with a view to meet the wants of those who desire to follow the studies embraced under it farther than they are pursued in a collegiate course. Those who desire further information on this subject are referred to the annual catalogue of the Institution for 1847-'48.

A college education is not required, however, of those who become students under this department.

The professors are always accessible to those who wish to consult them on matters relating to their several departments; and will undertake such analyses and investigations as may be entrusted to them. Letters of inquiry will be promptly attended to.

Analytical Laboratory, Yale College, New Haven, July, 1848.

SELLING OFF—LINNÆAN BOTANIC GARDEN AND NURSERY.

LATE OF WILLIAM PRINCE, DECEASED,

Flushing, Long Island, near New York.

WINTER & CO., PROPRIETORS.

IN consequence of the decease of the junior, and of the advanced age of the surviving partner, who, therefore, intends to relinquish the business, the entire stock of this establishment, comprising every description, including the newest and choicest varieties, of FRUIT AND ORNAMENTAL TREES, SHRUBS, VINES, AND PLANTS, ROSES, GREENHOUSE PLANTS, BOX EDGING, &c., will be disposed of in lots to suit purchasers, at very reduced prices, in order to close the business as speedily as possible.

Orders accompanied with the cash to the amount of ten dollars or upwards, will be supplied at a reduction of twenty-five per cent. from the usual prices.

Nurserymen, venders, and others wishing to purchase, by wholesale, will be supplied at such reduced prices according to quality and quantity, as will probably prove satisfactory to them. Young stocks, both in the fruit and ornamental departments, supplied very low by the quantity.

An opportunity is afforded to Amateurs and Nurserymen to obtain extra-sized and many new and rare Specimen, Fruit, and Ornamental Trees, Shrubs, and Plants, at very moderate prices.

Extra-sized Ornamental and Shade Trees for streets, lawns, and parks, low.

The establishment, now in the highest order, and densely stocked, will be disposed of on liberal terms, offering from its location, celebrity, saleable stocks, greenhouses, dwellings, and other conveniences for conducting the business, very superior advantages to any person disposed to pursue it.

It is requested that letters of inquiry, &c., be post paid. Descriptive Catalogues gratis.

Flushing, N. Y., Aug. 1st, 1848. 2t aug.

AMERICAN MUTUAL LIFE INSURANCE COMPANY.

Office No 40 Wall Street, N. Y.

LIFE INSURANCE, upon the plan adopted by this Company, is founded upon the principle of *contribution* in the shape of annual premiums to a common fund, proportioned to the amount insured, out of which the Company pay a stipulated sum on the death of the assured to the person for whose benefit the insurance is effected.

After a thorough investigation of the different systems adopted in Europe and America, and of the rates of premium charged, this company have reduced the premium 25 *per cent.* payable in cash, annually, semi-annually, or quarterly, as may be preferred, under a firm conviction that the exigencies of the Company will never exceed and seldom require *one half* of the annual premium now charged by the English and American Companies, which reduction will still leave a large margin for seasons of unusual sickness and death among its members—preferring to reduce the premiums at once to an amount more nearly approximating the actual necessities of the Company than to adopt the system of *premium notes* which is attended with many disadvantages.

The leading features of this Company are—

1. A guarantee capital of $50,000, which together with the accumulating premiums is deemed adequate to meet every contingency.

2. A *reduction* in the rates of premiums—payable annually, semi-annually, or quarterly, as may be preferred.

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References, A. B. Allen, N. Y.; Sanford Howard, and B. P. Johnson, Albany; Francis Rotch, Butternuts; and L. F. Allen, Black Rock.

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Auburn, May 16th, 1848. 3t

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